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EDITORIAL

With the beginning of the fifth year of the printed form of the Journal a number of changes of format are being introduced with the double purpose of making reading easier and of including more reading matter per page.

The splendid cooperation of the Editorial Committee under the able leadership of the Executive Editor made it possible to reduce the editorial processing of manuscripts to two months. However, in spite of all efforts in this direction the Journal shares more and more the general publication situation in the field of psychology with reference to backlog. The number of manuscripts accepted exceeds the amount of space available for them by two to one in spite of most careful selection and much condensation. This, at present, has resulted in a publication lag of about a year for most periodicals. The Journal is attempting to do its part in reducing this lag in the following ways:

1. Increasing the amount printed on each page as mentioned above.
2. Increasing the number of pages per volume as far beyond 500 as is feasible within the budget.
3. Adopting the practice of prior paid publication which provides further expansion at no expense to the reader.
4. Publishing in a series of monographs selected manuscripts too long for inclusion in the Journal yet meriting complete publication.

Another innovation begun in this issue is the printing of date of receipt of each manuscript. This is done in order to preserve priority of thought for authors who may not use the prior paid publication arrangement. It is furthermore pointed out that articles within any single issue of the Journal may have widely varied dates of receipt because of the two following practices:

1. The editorial policy of providing as far as possible contributions in each of the major sections of the Journal.
2. The practice of including in each major section contributions covering a variety of projective techniques.

The expansion of the Journal's circulation has not only continued in 1950 but has accelerated its pace. The editors are gratified with this evidence of approval of their efforts.

THE EDITOR

The Stability of Certain Rorschach Variables Under Conditions of Experimentally Induced Sets: I. The Intellectual Variables. [1, 2]

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INTRODUCTION

Many concepts and hypotheses have been offered concerning the rationale underlying various aspects of the Rorschach technique, but too few of these have been adequately subjected to experimental verification. One of the assumptions ordinarily made (and which is felt to be basic to its clinical use), is that the technique deals with the relationship between the Rorschach variables and the personality characteristics. Some authorities not only hypothesize but apparently assume as established fact that the Rorschach variables, together with the relationships between these variables, correspond directly to the various areas of the personality structure and its functioning. Schachtel and Hartock summarize this viewpoint when they state:

> Rorschach's test is based upon the assumption that the psychic elements revealed through the use of the test plates and represented by the test formulas operate in the whole life of the individual in the same ratios in which they appear in the test formulas. (17, page 321)

It appears that the various Rorschach variables have been closely identified with various aspects of the personality structure. These variables for many people have assumed the characteristics of the actual personality factors themselves.

Such an assumption raises the question of the *stability* [3] of the various Rorschach variables. If these variables are representative of the various aspects of the personality structure, then it should be expected that they would be more or less resistive to change, and would preserve a consistent picture

[1] This article is a summary of a doctoral dissertation at the University of Michigan. It is one of three integrated studies completed under the direction of Max Hutt.

[2] Published with permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.

[3] The term stability is utilized in this study to denote the absence of statistically significant change during a retest in which the conditions under which the test is administered are modified. The assumption is ordinarily made, (and which we are testing) that an individual makes the same score on the Rorschach variables regardless of the conditions under which the test is given. If change in the Rorschach test performance may be induced consciously and volitionally by the subject upon direction (according to the experimental conditions), then the test performance may not be regarded as stable. Such an induced change would differ from the problem of malingering in that the impetus for change in the Rorschach test performance arises from without the subject, while in malingering the impetus for change would arise from within the individual himself. If, however, it is demonstrated that the individual can consciously modify his performance in accordance with the conditions of the experiment, then it can be assumed that the performance may also be changed in accordance with an impetus which would arise within the individual himself.

for a given individual unless that individual was subjected to the impact of a traumatic situation which affects deep levels in his personality structure. It is important, therefore, that the stability of the various Rorschach variables be investigated. We should know whether or not these variables reflect only the impact of deep personality changes, or whether they are subject to change by influence of peripheral and situational stresses which do not in themselves effect any basic alteration of the individual's characteristic personality structure. It is of importance that we know which of the various major areas tapped by the Rorschach variables are most easily affected by peripheral, situational, and transient stresses so that more valid interpretation of a Rorschach protocol can be made for purposes of advance in personality theory, psychodiagnostic procedures, estimation of prognosis, and assessment of the course of psychotherapy. In addition to these areas where a knowledge concerning the stability of the Rorschach variables would be of importance, there is also the particular problem of facade. Inasmuch as knowledge concerning the Rorschach technique is becoming more widely disseminated among the general population, it is of clinical importance that the stability of the Rorschach variables be explored so that it may be known whether or not an individual, through conscious and volitional control of his responses in accordance with his knowledge of the test, will be able to erect a facade which is markedly different from the true personality structure. Repeatedly the problem of the stability of the various Rorschach variables arises in the clinical application of the technique.

It is evident that if, under conditions where it can be assumed that no deep alterations of the personality structure occur, individuals can consciously and volitionally alter their Rorschach responses so as to produce significant changes in the various variables, then we cannot assume the validity of the hypothesis that the Rorschach variables change significantly in themselves or in their relationships only when there are deep changes in the personality structure. If the variables are easily changed at a conscious volitional level, then interpretation of a Rorschach psychogram will need to be made in light of these significant findings concerning the stability of the various variables. In addition, a trait itself may be stable, but the manifestation of that particular trait may be unstable. If the measure of the trait is thus unreliable, then the trait itself cannot be assessed.

There is another aspect of the problem of stability which should be considered. This concerns the problem of the stability of the Rorschach variables in relationship to the individual and to the particular situation. It is perhaps possible that for some individuals the Rorschach factors are more stable than for others, and there may be situations in which certain of the Rorschach factors are more stable than in others. The general problem of stability assumes, therefore, a two-fold aspect: (a) How stable are the scores on the intellectual Rorschach variables under the various experimental conditions? And (b) Are there characteristics as shown by the Rorschach which distinguish those individuals

who change the most as opposed to those who change the least in accordance with the experimental conditions? Each of these aspects implies a quantitative determination of the change which occurs in the various Rorschach variables.

This particular study will be concerned with an investigation into these broader aspects of the stability of the Rorschach variables under various types of experimental conditions. Furthermore, the study will be limited to an investigation of those Rorschach variables presumably measuring *intellectual* traits. The emotional aspects of the Rorschach psychogram have been studied by other investigators, O. Milton (11) and K. Pottharst (13).

The first broad area which will be investigated will be the effect of various experimental sets upon the various Rorschach intellectual variables, in order to determine which variables are more resistant to change, how much change occurs, and to evaluate the implications for the Rorschach technique.

The second broad question will be an investigation into the problem of which kinds of Rorschach patterns characterize those individuals who change the most as opposed to those who show a minimum amount of change in intellectual factors. Differentiating personality characteristics of the individuals who change the most as opposed to those who change the least in intellectual factors will be developed.

THE INTELLECTUAL FACTORS

1. *Selection of Factors*

Beck (2, pg. 2), in his discussion of the intellective aspects of the personality structure states that intellectual activity, as part of the personality structure, manifests itself in several variables. These in summary form are: (a) the height of intelligence; (b) the horizontal dimension; (c) ability to come to grips with reality; and (d) creative imagination.

Beck then proceeds to discuss the various Rorschach variables as they relate to this analysis of the various aspects of the intellective area of the personality structure. These are: (a) height of intelligence; (b) the elasticity of intellective qualities; (c) intellectual adaptability; (d) orderly method; (e) conscious control; (f) the fantasy world; and (g) the degree of development of the potential intelligence, as shown by the content of the responses made.

Rorschach (15, pg. 65) differentiates the following components of intelligence: (a) capacity for continuous, active attention (F+ and sequence); (b) optimum clarity of perception and of associative processes in assimilation (F+); (c) optimum of ability to discipline the logical function, which is an automatic function arising in the individual; (d) optimum of "dispositional" energy of associative activity, i.e., a conscious or unconscious "willing" to produce complicated performances (W); (e) the ability to distribute the emotional and associative factors by means of a goal idea which maintains direction of attention; (f) optimum ability to form stereotyped sets; (g) optimum freedom and ease of flow of associations from sets which would otherwise tend to stereotype associations markedly; (h) optimum number of individually determined engrams, optimum originality or ability to form original associations. These facilities must be op-

timum in the same sense that they do not interfere with the capability to adapt to the associative scope of the others; (i) wealth of associations (Variability and original responses); (j) availability of associations (Particularly W); and (k) capacity for "inner creation" (M).

Wishner (20, p. 268) in his study of the psychometric significance of the Rorschach intellectual variables in neurotics utilizes a total of seventeen specific factors. If we examine Wishner's list of variables we see that he is concerned in general with aspects of the following broad categories: (a) total number of responses; (b) the whole response; (c) the extent of content of responses; (d) the organization of the response; (e) the animal responses; (f) the human responses; and (g) inner creativity. This grouping agrees well with the groupings of Rorschach and of Beck.

For the purposes of this study the following variables were selected for investigation: (a) the accuracy of the form perceptions (F+%); (b) the ability to be free from stereotyped associative sets (A%); (c) productivity (R); (d) range of content (Content category); and (e) area of blot utilized ((D+Dd)% and (W)).

These variables were selected for the purposes of this study inasmuch as they are accepted by Rorschach and other authorities as being indicative of the intellective aspects of the personality as measured by the Rorschach.

Design of the Study

1. *Subjects and Examiners*

All 84 subjects of the study were undergraduate students at the University of Michigan who were enrolled in an elementary course in Psychology.[4] Prior to this investigation no time or attention in the course had been allotted to any aspect of projective testing or theory. It can be assumed that these subjects were as unsophisticated in this realm as are college students who are used so frequently in other studies. In one of the lecture sessions of the one general psychology course that was being given and which contained 413 students, an announcement was made to the effect that an experiment was being undertaken which involved the use of tests and that volunteer subjects would be welcomed. Approximately 200 students volunteered to serve. Each volunteer subsequently completed a schedule card which listed his or her free hours. Subjects for the study were then chosen solely on the basis of their free time coinciding with the free time of the examiner.

All of the 27 examiners who administered the Rorschachs were graduate students in psychology at the University of Michigan working toward the Ph.D. Degree and were registered in the course, "Projective Theory and Techniques." The examiners were not acquainted with the nature of the experiment or the theory involved, but of course knew that, in general, it was concerned with the administration of the Rorschach under different conditions.

Each examiner first gave the Rorschach according to the usual directions of Beck (1) to each of four subjects. Four groups of subjects were consequently formed, membership in a particular group

[4] With the exception of nine subjects who were taking a course entitled, "The Psychology of Interpersonal Relations."

being dependent only upon the order of testing. The first subject was placed in the Control Group; the second subject tested by each experimenter was placed in Experimental Group 1; the third in Experimental Group 2, and the fourth in Experimental Group 3. No other criteria of group placement of the subjects were employed. Each subject was retested within approximately two weeks after the administration of the first test.

2. *Control Group*

This group serves as an experimental control enabling changes due to the mere repetition of the test to be assessed. It serves as an indicator of the relative stability of the various Rorschach variables under minimal opportunity for change. The Rorschach was given once, and then repeated in the same manner and under the same conditions as the original test.

There were 22 subjects in this group.

3. *Experimental Group 1*

This approach was designed in order to provide within the structure of the experiment, a maximum opportunity for change in the (D+Dd) % factor. This maximizing effect was attempted through the technique of instructing the subject on the second testing to give responses to the various *areas* of the ink-blots. This particular factor was chosen in preference to other intellective factors because it has long been believed by many that these determinants (D and Dd) are subject to conscious (i.e. volitional) control and are least resistive to change. There were 22 subjects in this group. Again two weeks after the administration of the first Rorschach under ordinary conditions, the test was repeated with the subject being instructed to see as many parts of the blot as possible.

4. *Experimental Group 2*

This approach was designed to allow, within the framework of the experiment, maximum opportunity for change of one of the variables believed to be the resultant of unconscious factors. This was attempted by instructing the subject on the second testing to give human movement responses. "M" was chosen because it has long been believed that it reveals deep unconscious aspects of the personality and that it is extremely resistant to change. There were 21 subjects in this group. The subject was instructed to see people doing something.

5. *Experimental Group 3*

The procedure for this final experimental group was designed to provide a conflictful situation for each of the subjects. The variables which are involved are considered intellective, emotional or affective. Thus a conflictful situation was provided for the subject, the instructions presumably reaching to all levels of the personality structure as measured in the Rorschach. At the same time, minimal opportunity for change in M was afforded as well as for change in (D+Dd) %. There were 20 subjects in this group. Again, two weeks after the original Rorschach, it was repeated with the subject being instructed to use color, give only forms of which he was sure, and to see people.

6. *Initial Treatment of Data*

It was essential that the data be analyzed in such a manner that

any possible biases of the experimenters, either conscious or unconscious, be controlled. Such prejudices had to be avoided in both gathering and scoring of the Rorschach protocols. The first possible distorting influence was dealt with by having the tests administered by persons other than the experimenters, who did not know at the time of the examinations the design of the experiment, or specific purposes of the study.

The second safeguard was to devise a technique whereby it could be insured that the scoring of the obtained records would not be distorted by the experimenters. This was accomplished by placing all of the records, regardless of the experimental group or order of the test, into a single group; assigning each record a number from a table of random numbers by a person who was not involved in the experiment; having this individual make out an identification card for each record and place upon it the random number assigned to the record along with such data as group, original or repeat test, etc.; obliterating the identifying data from the record; dividing the records into two piles by having an assistant draw numbers from a hat and alternately place the corresponding records into two piles; and then giving each group of records to one of two experimenters who then scored them according to Beck's technique.

Stability of Intellectual Variables Under Various Experimental Conditions

1. *Stability of the Intellectual Variables Under the Experimental Condition of Experimental Group 1*

Hypotheses. One of the major questions presented in section I was concerned with possible changes in the presumed intellectual Rorschach variables when opportunity for change (within the conditions of the experiment) was maximized. In order to investigate this particular problem the hypotheses listed below were formulated. In each hypothesis the term "experimental condition" is taken to mean the particular experimental set of the second Rorschach as defined in the instructions to the subjects in the control and each of the experimental groups.

1. The experimental condition does not produce any statistically significant increment on the repeat Rorschach over that attributable to chance in the subject's ability to respond to areas of the blot other than the blot as a whole. ((D+Dd)%.)
2. The experimental condition does not produce any statistically significant decrement on the repeat Rorschach other than that attributable to chance in the subject's ability to give integrated responses to the total ink blot. (W)
3. The experimental condition does not produce any statistically significant change on the repeat Rorschach other than that attributable to chance in the subject's accuracy of form perception. ((F+%), total productivity (R), stereotypy of responses (A%) or breadth of associational content.) These hypotheses were tested for each of the groups.

In order to investigate these hypotheses, comparison was made between the Control Group and Experimental Group 1 and the

TABLE I – Comparison of Control Group and Experimental Group 1 on Intellectual Variables in the Original and Repeat Tests

Variable	Group	N	Original Mean	Original S.D.	Repeat Mean	Repeat S.D.	Diff. Between Original and Repeat	RHO***	t*	Control and Exp. 1	t*
(D+Dd)%	Control	21	80.05	12.65	84.25	16.15	4.20	0.62	1.46	**	**
	Exp. 1	22	71.80	16.95	89.45	12.20	17.65	0.35	4.76		
W	Control	21	9.86	5.10	7.86	3.68	−2.00	0.62	2.22	**	**
	Exp. 1	22	13.08	8.25	6.27	5.97	−4.83	0.47	2.93		
F+%	Control	21	88.48	7.76	88.66	9.58	0.18	−0.16	0.07	0.09	0.02
	Exp. 1	22	83.69	11.22	83.96	10.29	0.27	0.42	0.11		
A%	Control	21	38.08	9.72	39.37	8.19	1.29	0.37	0.57	0.06	0.02
	Exp. 1	22	37.00	10.83	38.23	12.54	1.23	0.71	0.62		
Content Category	Control	21	11.28	2.50	10.90	3.52	−0.38	−0.11	0.42	0.74	0.62
	Exp. 1	22	10.64	3.44	11.00	3.14	0.36	0.61	0.56		
R	Control	21	49.90	17.10	50.60	18.65	0.70	0.83	0.30	5.80	2.40
	Exp. 1	22	47.25	17.10	53.65	18.50	0.40	0.76	2.36		

* t at the 10 per cent level is 1.73.
** Not computed. See text.
*** This is not intended to serve as a measure of reliability.

data presented in Table I were therefore first gathered.

Before proceeding to an evaluation of the changes in the intellectual variables under the experimental condition of Experimental Group I, the changes in the second Rorschach of the control Group will be first evaluated. Observation of Table I shows that the increment in the (D+Dd) % variable is significant between the 5 and 10 per cent levels of confidence, that the decrement in the W variable is significant between the 2 and 5 per cent levels of confidence, and that the changes in the F+%, A%, Content Category, and R variables are not significant at the 10 per cent level of confidence. It is, therefore, concluded that, under the conditions of the experiment in which no change in experimental conditions was introduced, the results of the retest for Control Group produces a lowered number of W responses and an increased (D+Dd) %, without any other significant changes shown in the F+%, A%, Content Category, or R variables.

In order to determine whether or not the Control Group and Experimental Group 1 were comparable, despite the fact that both groups were randomized, *t*'s were computed for each of the intellectual variables in the original Rorschachs in these groups. These are given in Table II.

It is observed from the data presented in Table II that the *t*'s for the W, F+%, A%, Content Category, and R variables do not reach statistical significance below the 10 per cent level of confidence, and therefore the Control Group and Experimental Group 1 may be regarded as being comparable insofar as these variables are concerned.

TABLE II—Comparison of Intellectual Variables in Original Rorschachs of Control Group and Experimental Group I

Variable	Mean Diff. Between Control and Exp. 1	Standard Error of Mean Diff.	*t**
(D+Dd)%	8.25	4.66	1.77
W	3.22	1.14	1.51
F+%	4.79	3.00	1.60
A%	1.08	3.21	.34
Content Category	.64	.93	.69
R	2.65	5.34	.50

* *t* for the 10 per cent level is 1.73.

In order to evaluate changes in these variables from the first to the second Rorschach of Experimental Group 1 as compared to the changes from the first to the second test of the Control Group, the technique of Mean Gains as presented by Peters and Van Voorhis was employed (12, p. 167).

The data of Table II indicate that there is a statistically significant difference in the score in the (D+Dd) % variable in the first Rorschach between the Control Group and Experimental Group 1 which is significant between the 5 and 10 per cent levels of confidence. Therefore the two groups are not comparable in the case of (D+Dd) % variable.

In order, therefore, to evaluate the changes in the score in the (D+Dd) % variable from the first to the second Rorschach of Experimental Group 1 as compared to the changes from the first to the second Rorschach of the Control Group, the regression technique for matching groups as developed by Peters and Van Voorhis (12, p. 463) was utilized. The reason for this is that any change which is significantly correlated with the

size of the original score might then be a resultant of the discrepancies between the original scores of the Control and Experimental Groups. The same technique was used for the W, due to the fact that a statistically significant difference was found between the Control Group and Experimental Group 3 for this variable. The data obtained by use of this technique is presented in Table III.[5]

TABLE III—Mean Differences Between Actual and Predicted (D+Dd)% and W Scores on the Second Rorschach of Experimental Group 1

Variable	Mean of Diff. Actual-Predicted Scores	Standard Error of Actual-Predicted Scores	t*
(D+Dd)%	10.08	5.40	1.87
W	3.45	1.31	2.63

* t at the 5 per cent level is 1.8, at the 1 per cent level 2.6.

From inspection of Table I, it is seen that the experimental condition of Experimental Group 1 produces an increment on the second Rorschach (D+Dd)% variable which may be accepted as significant at the 1 per cent level of confidence. The decrement in the W variable is significant also at the 1 per cent level of confidence, while the change in the R variable is significant between the 2 and 5 per cent levels of confidence. The changes in the A%, F+%, and Content Category variables are not significant below the 10 per cent level of confidence.

The change due to the experimental condition of Experimental Group 1 are now compared with the changes related to the retest of the Control Group. It is observed from the data presented in Table I that there are no statistically significant changes due to the experimental condition of the second Rorschach in Experimental Group 1 when compared with the changes due to the retest of the Control Group below the 10 per cent level of confidence in the cases of the F+%, A%, and Content Category variables. However, a statistically significant change is found in the case of the R variable between the 2 and 5 per cent levels of confidence. From the data presented in Table III it is observed that the increment in the (D+Dd)% variable is statistically significant between the 2 and 5 per cent levels of confidence, and the decrement in the W variable is statistically significant at the 1 per cent level of confidence.

Summary of Results. When a comparison was made between the Control Group and Experimental Group 1 as to the stability of the presumed intellectual variables of the study, the following results were obtained in connection with the hypotheses tested:

1. *Hypothesis No. 1.* (D+Dd)% is rejected between the 2 and 5 per cent levels of confidence.
2. *Hypothesis No. 2.* (W) is rejected at the 1% level of confidence.
3. *Hypothesis No. 3.* (F+%) is not rejected beyond the 10 per cent level of confidence. *(R)* is rejected between the 2 and 5

[5] The r between the first and second Rorschachs of the Control Group for the (D+Dd)% variable was .69. The regression equation for the prediction of the (D+Dd)% score on the second Rorschach was: $Y = .76\ (X - 80.05) + 84.25$. The r between the first and second Rorschach of the Control Group for the W variable was .56. The regression equation for the prediction of the W score on the second Rorschach was: $Y = .40\ (X - 9.86) + 7.86$.

per cent levels of confidence. (A%) is not rejected beyond the 10 per cent level of confidence. (Content Category) is not rejected beyond the 10 per cent level of confidence.

2. *Concommitant Changes in "Emotional" Variables Under Experimental Condition of Experimental Group 1*

A pertinent question which arises in connection with the stability of the intellectual variables under the experimental condition of Experimental Group 1 relates to concomitant changes in what are ordinarily presumed to be the "emotional" variables of the Rorschach. That is, we may ask the question: What changes if any occur in the so-called emotional variables of the Rorschach when changes in the presumed intellectual variables occur under the experimental condition of Experimental Group 1? The writer utilized the same presumed emotional variables as were selected by Milton (11) in this area of the total study. These are: M; Sum C; Sum Y; and S. It is presumed that under the experimental condition of Experimental Group 1 no changes would be found in the so-called emotional variables listed above. The hypothesis was formulated that:

The conditions to which Experimental Group 1 was subjected does not produce any significant change on the repeat Rorschach over that attributable to chance in any of the presumed emotional variables M, Sum C, Sum Y, or S.

To test this hypothesis the data collected by Milton (11) are presented in Table IV. It is observed from the data presented in Table IV that *t* attains statistical significance at the 10 per cent level of confidence. It is, therefore, concluded that under the experimental condition of Experimental Group 1 as compared to the retest of the Control Group that there are no statistically significant concommitant changes in the presumed emotional variables M, Sum C, Sum Y, or S.

TABLE IV

Variable	Mean Gain	Standard Error of Mean Gain	*t**
M	.14	1.27	.11
Sum C	.95	1.02	.93
Sum Y	.36	.85	.42
S	.38	1.49	.25

* *t* for the 10 per cent level is 1.73.

Stability of Intellectual Variables Under Experimental Condition of Experimental Group 2.

Hypotheses. We shall now investigate the stability of the variables when opportunity for change in the presumed emotional variables is maximized (Experimental Group 2). In order to investigate the experimental hypotheses comparison is made between the Control Group and Experimental Group 2, and the data presented in Table V were first gathered.

In order to determine whether or not the Control Group and Experimental Group 2 were comparable, despite the fact that both groups were randomized, *t*'s were computed for each of the variables in the original Rorschachs in these groups. These are given in Table VI.

It is observed from Table VI that the *t*'s for the W, (D+Dd) %, F+%, A%, Content Category, and R variables are not statistically significant below the 10 per cent level of confidence, and therefore

TABLE V – Comparison of Control Group and Experimental Group 2 of Intellectual Variables in the Original and Repeat Tests

Variable	Group	N	Original Mean	Original S.D.	Repeat Mean	Repeat S.D.	Diff. Between Original and Repeat	t	RHO	Mean Diff. Between Control-Exp. 2	t
(D+Dd)%	Control	21	80.05	12.65	84.25	16.15	4.20	1.46	0.62	*	*
	Exp. 2	21	83.15	14.20	88.25	9.60	5.10	2.34	0.74		
W	Control	21	9.86	5.10	7.86	3.68	−2.00	2.22	0.62	*	*
	Exp. 2	21	8.70	6.06	5.20	3.38	−3.50	3.61	0.71		
F+%	Control	21	88.48	7.76	88.66	9.58	0.18	0.07	−0.16	2.27	.59
	Exp. 2	21	85.55	12.15	88.00	7.65	2.45	0.97	0.42		
A%	Control	21	38.08	9.72	39.37	8.19	1.29	0.57	0.37	−9.24	2.89
	Exp. 2	21	35.70	12.35	27.75	10.60	−7.95	3.43	0.60		
Content Category	Control	21	11.28	2.50	10.90	3.52	−0.38	0.42	−0.11	−1.44	1.23
	Exp. 2	21	12.28	3.38	10.46	3.68	−1.82	3.03	0.69		
R	Control	21	49.90	17.10	50.60	18.65	0.70	0.30	0.83	−4.70	1.00
	Exp. 2	21	55.05	18.15	51.05	18.95	−4.00	1.00	0.53		

* Not computed.

the Control Group and Experimental Group 2 are regarded as being comparable insofar as these variables are concerned. The technique of Mean Gains was therefore utilized in evaluating changes from the first to the second Rorschach of Experimental Group 2 as compared to those in Control Group for the F+%, A%, Content Category, and R variables. In the same manner as the previous section, the regression technique was employed for evaluating similar changes in the (D+Dd) % and W variables, in order to preserve the same technique for the treatment of these variables throughout the study. Table VII. presents the data obtained through the application of the regression technique in the case of the W and (D+Dd) % variables.

TABLE VI—Comparison of Intellectual Variables in Original Rorschachs of Control Group and Experimental Group 2

Variable	Mean Diff. Between Control-Exp. 2	Standard Error of Mean Diff.	t*
(D+Dd)%	3.10	4.25	.73
W	1.16	1.78	.65
F+%	2.93	3.22	.91
A%	2.38	3.51	.68
Content Category	1.00	.94	1.06
R	5.15	5.53	.93

* t for the 10 per cent level is 1.73.

TABLE VII—Mean Differences Between Actual and Predicted (D—Dd) % and W Scores of the Second Rorschach of Experimental Group 2

Variable	Mean Diff. in Pred.-Actual Scores	Standard Error Pred.-Actual Scores	t*
(D+Dd)%	1.62	4.93	.33
W	1.94	1.06	1.83

* t for the 5 per cent level is 1.8, at the 10 per cent level 2.6.

From observation of Table V it is seen that the experimental condition of Experimental Group 2 produces an increment in the (D+Dd) % variable which is significant between the 2 and 5 per cent levels of confidence. The decrement in the W variable is significant at the 1 per cent level of confidence, the change in the A% is significant at the 1 per cent level of confidence and the change in the Content Category variable is also significant at the 1 per cent level of confidence. The changes in the F% and R variables are not significant at below the 10 per cent level of confidence.

The changes due to the experimental condition of Experimental Group 2 are now compared with the changes due to the experimental condition of the Control Group. It is observed from the data presented in Table V that there is no statistically significant change due to the experimental condition of the second Rorschach of Experimental Group 2 as compared with the changes due to the experimental condition of the Control Group below the 10 per cent level of confidence in the case of the F+%, R, or the Content Category variables. Change in the A% variable is significant at the 1 per cent level of confidence. Observation of Table VII indicates that there is no statistically significant increment in the (D+Dd) % below the 10 per cent level of confidence but that the decrement in the W variable due to the experimental condition of the second Rorschach in Experimental Group 2 is significant between the 2 and 5 per cent levels of confidence.

TABLE VIII — Comparison of Control Group and Experimental Group 3 on Intellectual Variables in the Original and Repeat Tests

Variable	Group	N	Original		Repeat		Diff. Between Original and Repeat			Mean Diff. Between Control-Exp. 3	
			Mean	S.D.	Mean	S.D.		t*	RHO		t
(D+Dd)%	Control	21	80.05	12.65	84.25	16.15	4.20	1.46	0.62	**	**
	Exp. 3	20	87.20	11.60	90.10	12.80	2.80	2.59	0.93		
W	Control	21	9.86	5.10	7.86	3.68	−2.00	2.22	0.62	**	**
	Exp. 3	20	6.10	4.18	3.90	3.92	−2.20	1.96	0.28		
F+%	Control	21	88.48	7.76	88.66	9.58	0.18	0.07	−0.16	4.07	.95
	Exp. 3	20	85.75	12.60	90.00	10.35	4.25	1.18	−0.07		
A%	Control	21	38.08	9.72	39.37	8.19	1.29	0.57	0.37	−4.79	1.63
	Exp. 3	20	38.50	11.45	35.00	15.35	−3.50	1.85	0.85		
Content Category	Control	21	11.28	2.50	10.90	3.52	−0.38	0.42	−0.11	−2.32	2.03
	Exp. 3	20	10.10	3.26	7.40	2.58	−2.70	5.00	0.70		
R	Control	21	49.90	17.10	50.60	18.65	0.70	0.30	0.83	−9.20	3.09
	Exp. 3	20	47.75	13.75	38.75	13.30	−9.00	4.97	0.83		

* *t* for the 10 per cent level is 1.73.
** Not computed.

Summary of Results. When the Control Group is compared with Experimental Group 2 as to the stability of the presumed intellectual variables the following results were obtained:

1. *Hypothesis No. 1:* (D+Dd) % is not rejected beyond the 10 per cent level of confidence.
2. *Hypothesis No. 2:* (W) is rejected between the 2 and 5 per cent levels of confidence.
3. *Hypothesis No. 3:* (F+%) is not rejected beyond the 10 per cent level of confidence. *(R)* is not rejected at the 10 per cent level of confidence. *(A%)* is rejected at the 1 per cent level of confidence. (Content Category) is not rejected beyond the 10 per cent level of confidence.

Stability of Intellectual Variables Under Experimental Condition of Experimental Group 3.

At this point changes in the intellectual factors under conditions which provide for presumed conflictful instructions (Experimental Group 3) will be investigated. In order to investigate these hypotheses comparison is made between the Control Group and Experimental Group 3, and the data (presented in Table VIII) were first gathered. In order to determine whether or not the Control group and Group 3 were comparable, despite the fact that both groups were randomized, *t*'s were computed for each of the variables in the original Rorschachs in these groups. These are given in Table IX.

It is observed from Table IX that the *t*'s for the F+%, A%, Content Category, and R variables are not statistically significant below the 10 per cent level of confidence. The *t* for the (D+Dd) % is significant between the 2 and 5 per cent levels of confidence; while the *t* for the W is also significant between the 2 and 5 per cent levels of confidence. The technique of mean gains is thus applicable to the evaluation of changes from the first to the second Rorschach of Experimental Group 3 as compared to these in the Control Group for the F+%, A%, Content Category, and R variables. The (D+Dd) % and W variables are again treated through the previously used regression technique. Table X presents the data obtained through the application of the regression technique in the case of the (D+Dd) % and W variables.

TABLE IX—Comparison of Intellectual Variables in Original Rorschachs on Control Group and Experimental Group 3

Variable	Mean Diff. Between Control-Exp. 3	Standard Error of Mean Diff.	*t*
(D+Dd)%	7.15	3.88	1.84
W	3.76	1.49	2.52
F+%	2.73	3.37	.81
Content Category	1.18	.93	1.27
A%	.42	3.41	.12
R	2.15	4.96	.43

TABLE X—Mean Differences Between Actual and Predicted (D+Dd) % and W Scores of the Second Rorschach of Experimental Group 3.

Variable	Mean Diff. in Pred.-Actual Scores	Standard Error of Pred.-Actual Scores	*t*
(D+Dd)%	.48	7.65	.63
W	2.76	1.11	2.49

From observation of Table VIII it is seen that the experimental condition of Experimental Group 3 produces an increment in the (D+Dd) % variable at the 1 per cent

level of confidence. The decrement in the W variable is significant between the 2 and 5 per cent levels of confidence. The change in the F+% is not significant below the 10 per cent level, while the change in the A% is significant between the 5 and 10 per cent levels of confidence. Both the changes in the R and Content Category variables are significant at the 1 per cent level of confidence.

The changes due to the experimental condition of Experimental Group 3 are now compared with the changes due to the experimental condition of the Control Group. It is observed from the data presented in Table VIII that there is no statistically significant change due to the experimental condition of Group 3 as compared with the Control Group below the 10 per cent level of confidence in the case of the F+% or the A% variable. Change in the Content Category variable is significant between the 5 and 10 per cent levels of confidence. The change in the R variable is significant at the 1 per cent level of confidence. Observation of Table X shows that the increment in the (D+Dd) % variable is not significant below the 10 per cent level of confidence. The decrement in W is significant between the 2 and 5 per cent levels of confidence.

Summary of Results. When the Control Group is compared to Experimental Group 3 as to the stability of the presumed intellectual variables the following results were obtained:

1. *Hypothesis No. 1:* (D+Dd) % is not rejected beyond the 10 per cent level of significance.
2. *Hypothesis No. 2:* (W) is rejected between the 2 and 5 per cent levels of confidence.
3. *Hypothesis No. 3:* (F+%) is not rejected beyond the 10 per cent level of confidence. *(R)* is rejected at the 1 per cent level of confidence. *(A%)* is not rejected beyond the 10 per cent level of confidence. *(Content Category)* is rejected between the 5 and 10 per cent levels of confidence.

RORSCHACH CHARACTERISTICS RELATED TO CHANGE IN (D+Dd) % VARIABLE

The question now arises as to whether or not there are any Rorschach characteristics which might serve to differentiate those individuals who changed the most in the (D+Dd) % variable from those who changed the least. It is necessary that the search for these possible differentiating characteristics first be made in the original Rorschach records, inasmuch as the repeat records reflect (as has been previously shown) the effects of the experimental condition under which they were given. It is realized that this investigation has limitations. However, it may be that the Rorschach configurations do not show this vulnerability, and again in clinical practice judgments are continually made on people through the use of the Rorschach technique. With the limitation of vulnerability in mind, investigation was first made between those individuals who changed the most in (D+Dd) % as opposed to those who changed the least under the experimental condition of Experimental Group 1.

Within the conditions of the experiment the opportunity for change in the (D+Dd) % variable was maximized in the experimental condition of Experimental Group 1. Therefore, it was decided

to examine this group in detail in order to form hypotheses concerning the Rorschach scores of the individuals who changed the most as opposed to those who changed the least in (D+Dd) %, and then to apply these hypotheses to the Control Group and Experimental Groups 2 and 3.

Experimental Group 1 was therefore dichotomized as to the individuals who showed the most and least change in the (D+Dd) % variables from the original to the repeat Rorschach. (The N in each of these subgroups was 11.) The subgroup showing the most change had a mean change of 27.9, with a standard deviation of 10.9. The subgroup showing the least change had a mean change of 4.8 with a standard deviation of 3.5. The difference between the mean changes was 23.1. the standard error of the mean difference was 3.62, and the *t* was 6.4, which is statistically significant at the 1 per cent level of confidence. The two subgroups were then compared first as to the scores on the single presumed intellectual and emotional variables in the original Rorschachs. These data are collected in Table XI.

It is observed from Table XI that there is a statistically significant difference in the (D+Dd) % variable at the 1 per cent level of confidence, with the subgroup changing the most having a comparatively lowered (D+Dd) % in the original Rorschach record. There is a statistically significant difference at the 1 per cent level for the W score, with the group changing the most having a higher number of W in the original Rorschach record. There is also a statistically significant difference for the M variable between the 5 and 10 per cent levels of confidence with the group changing the most having a higher M score in the original Rorschach record. There are no statistically significant differences below the 10 per cent level of confidence for the F+%, A%, Content Category, R, Sum C, or S variables. It is concluded, therefore, that the individuals who change the most in (D+Dd) % from the original to the repeat Rorschach under the experimental condition of Experimental Group 1 differ from those who change the least in that their original Rorschachs are characterized by comparatively higher W and M scores and lower (D+Dd) % score.

TABLE XI — Comparison of Single Intellectual and Emotional Variables in Original Rorschachs of Experimental Group 1 when Dichotomized as to Most and Least Change in (D+Dd) %

Variable	Most Change Mean	Most Change S.D.	Least Change Mean	Least Change S.D.	Mean Diff.	S. E. of Mean Diff.	*t**
(D+Dd)%	61.09	11.78	84.64	11.11	23.55	5.13	4.59
W	20.27	2.48	8.55	1.81	11.72	2.07	3.82
F+%	77.64	37.07	90.18	5.47	12.54	12.13	1.03
A%	35.64	9.30	38.09	10.83	2.45	4.52	0.54
Content Category	12.18	3.87	10.00	3.40	2.18	1.63	1.34
R	48.45	14.96	45.72	17.75	2.73	7.35	0.37
M	7.45	3.94	4.00	3.51	3.45	1.67	2.07
Sum C	7.95	4.42	5.64	5.75	2.31	2.30	1.00
S	4.64	2.74	3.18	2.89	1.46	1.26	1.16

* *t* at the 10 per cent level is 1.8, at the 5 per cent level 2.20, and at the 1 per cent level is 3.10.

The next step in investigating the problem of differences in the original Rorschachs of those individuals who changed the most as opposed to those who changed the least in the (D+Dd) % variable under the experimental condition of Experimental Group 1 was to look for possible differences in commonly accepted configurations of Rorschach scores. The configurations examined were:

1. (M + Sum C) : This score presumably relates to the total available psychic energy of the individual.
2. (M − Sum C) : This presumably refers to the predominance of extroversive (as shown by a negative score) or introversive (as shown by a positive score) qualities.
3. (W−M) : This score presumably relates to the intellectual drive (as shown by the W) and the productive capacity to achieve this drive (as shown by the M).

The reasons for the selection of these configurations is that the two most commonly accepted configurations are the (W:M) ratio and the (M:Sum C) ratio (Erlebnistypus). The (M + Sum C) and (M − Sum C) scores are modifications which render the various aspects of the (M:Sum C) ratio more easily treated statistically, and the (W−M) score is a modification of the (W:M) ratio which also makes this score more easily treated statistically.

The data collected to compare the subgroups of Experimental Group 1 as to these variables in the original Rorschachs are presented in Table XII. Observation of Table XII shows that there is a statistically significant difference for the (M + Sum C) variable which is between the 2 and 5 per cent levels of confidence. The difference for the (M − Sum C) variables is statistically significant between the 2 and 5 per cent levels of confidence. The difference for the (W−M) variable is statistically significant between the 2 and 5 per cent levels of confidence. It is, therefore, concluded that the individuals who showed the greatest amount of change in the (D+Dd) % variable from the original to the repeat Rorschach under the experimental condition of Experimental Group 1 are characterized as showing in the original Rorschach a comparatively higher (M + Sum C) score, a positive (M − Sum C) score, and a comparatively higher (W−M) score, while those who changed the least in the (D+Dd) % variable are characterized by a comparatively lower (M + Sum C) score, a negative (M − Sum C) score, and a comparatively lower (W−M) score.

These conclusions imply that

TABLE XII — Comparison of Rorschach Configurations in Original Rorschachs of Subgroups of Experimental Group 1 (Dichotomized as to Most and Least Change in (D+Dd) % Variable

Variable	Most Change Mean	Most Change S.D.	Least Change Mean	Least Change S.D.	Mean Diff.	S. E. of Mean Diff.	t*
(M+Sum C)	14.82	5.81	8.73	6.07	6.09	2.66	2.29
(M−Sum C)	3.09	8.00	−3.64	0.99	6.73	2.72	2.47
(W−M)	11.00	8.62	2.73	3.56	8.27	2.96	2.70

* t for the 5 per cent level is 2.22, and for the 1 per cent level is 3.17.

the individuals who changed the most under the experimental condition of Experimental Group 1 are mature individuals, who are not (in the clinical usage of the terms) rigid or constricted, and who possess a comparatively high degree of psychic energy, leading to comparatively high capacities for responding both to outer and inner stimuli. They presumably may be characterized as "rich and mature" personalities. From an inspection of the original Rorschach records of Experimental Group 1, the Rorschach record of the "rich and mature" personality may be defined for the purpose of this study in terms of the Rorschach variables in the following manner:

1. The presence of an (M + Sum C) score of 12 or more.
2. The presence of an (M − Sum C) score of −1 or more.
3. The presence of a (W−M) score of 5 or more.
4. The presence of an (F+FY+FV) % of 75 per cent or less.

The hypothesis then is formulated: There is no difference other than that attributable to chance in the Stability Score in the original Rorschach of those individuals changing the most and least in the (D+Dd) % variable under the experimental condition of Experimental Group 1.

In order to test this hypothesis the data presented in Table XIII were gathered:

Observation of Table XIII shows that the *t* for the difference in Stability Score is significant statistically at the 1 per cent level of confidence.

While we have not set up a specific experiment to test whether or not these findings are applicable to other groups the hypothesis may be tentatively accepted for Experimental Group 1. A test of this hypothesis would be a vigorous cross-validation study in which predictions are made as to direction and amount of shift on the basis of the Stability Score pattern and a similar experimental condition. Another way to explore the applicability of this hypothesis would be to examine the accuracy of predictions for other groups within this study.

In order to do this the data presented in Table XIV were gathered. The Control Group and Experimental Groups 2 and 3 were dichotomized in the same manner as

TABLE XIII — Comparison of Stability Scores of Subgroups of Experimental Group 1 Dichotomized as to Most and Least Change in the (D+Dd) % Variable

Subgroup	Mean	S.D.	Mean Diff.	S. E. of Mean Diff.	*t**
Most Change	2.55	1.02	1.55	0.46	3.38
Least Change	1.00	1.04			

* *t* for the 1 per cent level is 3.17.

One point may be then given for the presence of each one of these "signs" within a record, so that an individual may achieve a score of 0 to 4 when his record is scored for the presence of these "signs." The total score of these "signs" will be for the purpose of this study referred to as the "Stability Score."

TABLE XIV — Comparison of Stability Scores of Subgroups of the Control Group and Experimental Groups 2 and 3 Dichotomized as to Least and Most Change in (D+Dd) %

Group	Subgroup	Mean	S.D.	Mean Diff.	S. E. of Mean Diff.	t*
Control	Most Change	2.40	0.98	1.10	0.37	3.00
	Least Change	1.30	0.64			
Exp. 2	Most Change	2.80	0.80	1.30	0.45	2.90
	Least Change	1.50	1.20			
Exp. 3	Most Change	1.50	1.12	0.40	0.53	0.76
	Least Change	1.10	1.13			

* t for the 5 per cent level is 2.23, and for the 10 per cent level is 1.81.

the dichotomization of Experimental Group 1.

Observation of Table XIV indicates that the t for the Stability Score of the subgroups in the Control Group is statistically significant between the 2 and 5 per cent levels of confidence; that the t for the subgroups of Experimental Group 2 is statistically significant between the 2 and 5 per cent levels of confidence; and that the t for subgroups of the Experimental Group 3 is statistically not significant below the 10 per cent level of confidence. It is, therefore, concluded that the Stability Score differentiates between the individuals who changed the least in the Control Group and Experimental Groups 1 and 2, but does not so differentiate in Experimental Group 3.

CONCLUSIONS AND IMPLICATIONS

1. *Stability of the Intellectual Variables.*

Control Group. On the basis of the results, it is first concluded that a second administration of the Rorschach test within a short interval of time results in a statistically significant decrease in the (D+Dd) % scores. As one possible explanation of this it is suggested that the original Rorschach test situation presents usually an entirely novel situation to the subject—one for which he has no adequate frame of reference or yardstick by which he may be able to judge the competency of his responses. The second test may prove to be a relatively more threatening situation, as the subject first has no closure as to his performance on the original Rorschach test, and further does not know the purpose of the administration of the second test. As a result of these influences he may become more threatened and insecure, and so in the retest performance shows a lessened capacity for integrative intellectual activities (W) and an increased emphasis upon the more commonplace, obvious, practical, and concrete aspects of the blots (D+Dd) %. The above conclusion would imply that the norms developed for the W:D:Dd relationships (The Approach) may not be applicable in the case of a second administration of the Rorschach test within a short interval of time. They might need to be refined in light of these findings regarding the effect of the retest. Another important implication of this conclusion would re-

late to the utilization of a repeat Rorschach test for the purpose of assessing the progress of an individual under psychotherapeutic treatment. One may not be able to assume that changes in the W and (D+Dd) % scores would be entirely related to the therapeutic procedures. Any such changes need to be evaluated in light of the decrement in the W score and the increment in the (D+Dd) % score which occur in connection with a second administration of the Rorschach. These conclusions apply to a trend derived from analysis of group data, but might show considerable variability in a given individual case.

The second conclusion, based upon the results presented, is that the retest produces no statistically significant change in the F+%, A%, Content Category, or R variables. The data in the case of the F+%, A%, Content Category, and R variables lead to the conclusion that all the presumed intellectual variables of the Rorschach do not have equal reliability. It may be implied from this conclusion that those variables which change most readily (W) and (D+Dd) % are relatively extremely sensitive to the external and possibly the internal conditions under which the Rorschach test is administered. If this is true, then a Rorschach score may not be adequately interpreted unless the precise conditions under which it is administered are known, the terms "precise conditions" relating to both the external as well as to the internal conditions of the subject. It is implied that we cannot take a Rorschach gross score alone and adequately interpret that score unless both of these conditions are known. The implication is further stressed that not only the *external conditions* under which the Rorschach is administered be considered but also possibly the *internal conditions* which are peculiar to a particular subject at a particular moment.

Experimental Group 1. The statistically significant increment in the (D+Dd) % score in accordance with the experimental condition of Experimental Group 1 which occurred independently of the effects of the retest or the amount of the score originally present, leads to the conclusion that the volitional aspects of this set significantly altered the Rorschach psychograms. The subject was asked to see more D and Dd, and this he did. The subject changed the specific Rorschach variable towards which attention was directed. In the writer's opinion it may be expected that similar changes could be made in the other intellectual variables (A%, Content Category, and R). It is concluded that change in the intellectual variables of the Rorschach can be made consciously and volitionally by the subject. It is, of course, realized that unconscious factors may play a role in the determination of the total characteristics of a Rorschach response. However, the conclusion still remains that the production of a Rorschach response as far as the presumed intellectual aspects are concerned is subject to conscious and volitional control by the subject. In the experiment change was made by the subject in response to the external stimulus of the experimental condition. However, it may be assumed that such a change could also be made in accordance with stimuli arising within the subject (for example, as might occur in the case of maling-

ering). The individual who has insight into or a particular attitude towards the Rorschach test could manipulate the production of the presumed intellectual variables and thus erect a facade which would not be representative of the true personality structure. In addition to these conscious influences there may also be the possibility of influences by unconscious factors such as mood. The stability of the variables which presume to measure intellectual traits may be therefore dependent upon both conscious factors (as in the case of malingering) and unconscious affects (such as mood). It is believed that the intellectual aspects of the Rorschach test first are subject to volitional and conscious control and further that they are also subject to the influence of unconscious affects which might distort and falsify the true personality structure on the test manifestations.

Experimental Group 2. The statistically significant decrease in the W and A% scores under the experimental condition of Experimental Group 3, and which occurred independently of the effects of the retest leads to the conclusion that the variables presumably measuring intellectual traits are not stable even when a set to change them is not directly given. This conclusion serves to emphasize further the lack of stability of the "intellectual variables" of the Rorschach test. It would be possible to attribute the decrement in the W variable which occurred here first to the anxieties aroused by the second Rorschach test and second to the fact that it would be easier to see additional M in the parts of the blot rather than in the blot as a whole. The drop in the A% would also be related to the fact that the instructions to "see people in action" would imply a set towards content.

Experimental Group 3. Due to the fact that the W, R, and Content Category variables decreased with statistical significance independently of the effects of the retest, it is concluded that the "intellectual variables" of the Rorschach are also not stable under instructions involving "conflict." One possible explanation is that the "conflict" set reduces the capacities for synthesis and integration, resulting in a lowered W score. The subject becomes more rigid and constricted, and his responses are therefore more constricted (Content Category). Spontaneity decreases, and total output (R) therefore shows a drop. This conclusion in regard to the stability of the intellectual variables under conditions of the conflicting set of Experimental Group 3 again demonstrates the lack of stability of the "intellectual variables."

2. *Relationship of Change in Intellectual to Change in Emotional Variables.*

It is concluded from the results presented that the absence of change in the variables presumed measuring emotional traits despite profound change in the "intellectual variables" indicates that there is no intrinsic relationship between the manifestation of these variables on the Rorschach test. Marked changes may occur in the "intellectual variables" without any corresponding changes in the "emotional variables."

Since the scores on the "intellectual variables" of the Rorschach test are concluded to be unstable in that they are subject to conscious and volitional control on the part of the subject, it is implied that

the manifestations of the intellectual variables are those of phenotypic or surface behavior, and so may be regarded as surface rather than as source traits. The "emotional variables" may be regarded in the same manner, inasmuch as Milton (11) demonstrated the vulnerability of these variables to conscious and volitional controls. Either that, or else that the capacity is constant but the overt manifestations vary. In either case, the *manifestations* must be regarded as *pheno-typic* and that is what is measured. Both the *manifestations* of the "intellectual" and "emotional" variables (which are measured by the Rorschach test) may thus be regarded as surface rather than source traits which bear no intrinsic relationships to each other. It is, however, entirely possible that the "intellectual" and "emotional variables" of the Rorschach test are manifestations of different personality characteristics at the same surface level within the personality. Even if they could be regarded as being essentially measures of lower level source traits, their measurement as reflected in the Rorschach test would be unreliable since their manifestation (on the Rorschach test) is modifiable at a conscious and volitional level.

3. *Characteristics Related to Change.*

It is concluded that the (D+Dd) % variable is relatively more unstable in the case of rich and mature personalities. It is hypothesized in explanation of this that these individuals are secure in their relationships with other people, and so readily introcept the stimuli arising in interpersonal relationships. (In the case of Experimental Group 1 this included the set to increase the D and Dd responses). They respond well to both inner and outer promptings, and have no dominant need to cling to the "status quo." The defense systems of these individuals are flexible and readily adaptable to the exigencies of the particular situation. It is hypothesized further that the stability of the "intellectual variables" of the Rorschach is inversely related to the adaptability of the defense network of the personality. A likely conclusion therefore is that the *less adaptable and more rigid is the defense network, the more stable are the scores on the "intellectual variables" of the Rorschach test.* A final implication of the general conclusion is that the Rorschach test can be adequately interpreted only in light of knowledge of the particular population from which the subject is drawn.

It is also concluded that the individuals who change the most and the least in the (D+Dd) % variable can be predicted in the Control and Experimental Groups 1 and 2, but not in Experimental Group 3, on the basis of the "Stability Score." An implication of this conclusion is that it may be possible to predict in clinical practice which Rorschach psychograms are the most stable as far as the intellectual variables are concerned, except in cases where conflictful directions in the administration of the Rorschach test are involved. The implication needs vigorous testing.

4. *Summary of Major Conclusions and Implications.*

Major conclusions. The major conclusions of the study may be

summarized in the following statements:

1. The scores on the "intellectual variables" of the Rorschach test are not stable. The lack of stability of these variables is demonstrated under retest conditions; when the opportunity for change in the intellectual variables (within conditions of the experiment) is maximized; when the opportunity for change in the presumed emotional variables (within conditions of the experiment) is maximized; and under conditions of conflicting set.
2. Change in the "intellectual variables" may be made at a conscious and volitional level.
3. All the "intellectual variables" of the Rorschach test are not equally stable. Most stable under the retest condition are the F+ %, A%, Content Category, and R. The least stable are the W and (D+Dd) % variables.
4. There is no intrinsic relationship between the presumed intellectual and emotional Rorschach variables.
5. The (D+Dd) % variable is relatively more unstable in personalities characterized as "rich and mature." Such personalities are able to adapt more readily to varying test conditions.
6. The individual who is relatively more stable in the (D+Dd) % variable may be differentiated from the individual who is relatively less stable by means of the Stability Score in all groups except that one in which a conflicting set is given.

Major Implications. The major implications are summarized in the following statements:

a. The norms developed for the W : D : Dd relationships (Approach) are not applicable in the case of a retest within a "short time interval."

b. Changes in the W and (D+Dd) % variables in a Rorschach test repeated for the purpose of evaluating progress in psychotherapy may not be entirely attributed to the effects of therapy.

c. An individual may erect a facade, both conscious and unconscious, so that test results do not necessarily reflect the "true" personality structure.

d. The "intellectual variables" as manifested on the Rorschach test are representative of surface rather than source traits.

e. The stability of the "intellectual variables" as measured, is inversely related to the adaptability of the defense network. The more adaptable the defense network, the less stable are the "intellectual variables."

f. In the clinical usage of the Rorschach test one may aid in the more accurate appraisal of the significance of the "intellectual variables" in the employment of the Stability Score.

g. A score on one of the Rorschach "intellectual variables" may be adequately interpreted only when the precise external conditions under which the test was administered are known.

h. A score on one of the Rorschach "intellectual variables" may be adequately interpreted only in light of knowledge concerning the particular population from which the subject is drawn. (It is possible that the conclusions drawn would not necessarily apply to groups of neuropsychiatric patients.)

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The Use of Projective Techniques in the Study of the Socio-psychological Aspects of Acculturation[1]

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I: INTRODUCTION

In recent decades a number of developments have been taking place which, to my mind, indicate that we are entering a new era in the investigation of the psychodynamics of human behavior. From disciplines that once were relatively isolated from one another new facts, concepts, techniques, hypotheses and theoretical formulations now seem to be rapidly crystallizing in the form of a common intellectual background of greater usefulness to all concerned. The body of knowledge now emerging can be more and more sharply focused upon a wider variety of problems, vital to our deeper understanding of the nature of man, the range and the characteristic form of his psychological integration and culturally mediated adjustment.

I am thinking back to only a few decades ago when academic child psychologists were initiating empirical studies of ontogenetic development but were working without the benefit of personality theory, although at the same period in psychoanalysis and psychiatry novel hypotheses were in the making. Today, the study of child development certainly is one of the major areas where the application of knowledge and techniques from the greatest variety of sources is paving the way to new insights.

I am thinking of the investigation of learning and perception, once pursued by experimental psychologists in isolated grandeur whereas, in recent years, new bridges are being built that are linking the results of such inquiries more and more closely with the psychodynamics of personality adjustment and personality theory. Of course, I am thinking also of the development and expansion of projective techniques which provide a mirror in which we can see reflected a sharper image of the essential characteristics of the personality as a functioning whole than was possible before. The very fact that these techniques have found a sphere of usefulness outside the clinic and, for better or for worse, even have fallen into the hands of anthropologists, is significant of the general trend I have in mind.

In this latter connection I am thinking, too, of the knowledge and concepts that, emanating to a large extent from cultural anthropology, have influenced those who are concerned professionally with the behavior of individuals. The primary notion derived from an anthropological and sociological approach to the study of man involves a recognition of the simple fact that the human being always must be viewed in his social setting, in his inter-personal relationships and as an integral unit in a sociocultural whole. This means that human behavior must, in part, be

[1] Presidential address, Society for Projective Techniques and Rorschach Institute, Annual Meeting, September 8, 1950, State College, Pennsylvania.

conceived as a function of man's universal gregariousness and the variables derived from this fact given due weight. At the present time the concept of culture and the relevance of cultural variability for the study of perception, motivation, attitudes, and personality structure have become almost as familiar in psychology and psychiatry as in the social sciences.

I am thinking likewise of the developments in psychotherapy that have emerged in this century which, despite minor variations in their theoretical background, are now the common intellectual property of social workers, counsellors and clinical psychologists, as well as psychiatrists. This line of development, in turn, suggests another point of crucial importance in a broader application of the body of knowledge we are accumulating. I am thinking of an emerging concept of mental health, grounded in a more adequate body of empirical data and theoretical constructs than we have possessed before, of what psychological integration means in functional terms. In this sense mental health is not merely an ideal value, the projection of human aspiration; it is essentially a concept of optimum psychological functioning. And since human beings cannot be realistically considered apart from their roles in a socio-cultural system, which is the matrix of their character formation, psychological integration at a high functional level cannot be separated from the qualitative characteristics of the sociocultural whole of which the individual is an integral part. What the necessary cultural patterns are for the optimum psychological functioning of man in society, how far different modes of life and systems of value provide these necessary conditions, and how far old patterns may be shifted or varied without reducing the general level of mental health, are questions that need a great deal of investigation before any final answer can be given. But that we are on the threshhold of advancing inquiries into many new types of problems that will require the utilization of the knowledge, the techniques and working hypotheses derived from a wide gamut of disciplines, I have no doubt. Otherwise it might be difficult to account for the honor you have conferred upon me and your willingness to listen to what I have to say tonight.

2. The Problem: Psychological Aspects of Acculturation

In recent years many anthropologists have devoted considerable attention to problems of cultural dynamics. Possibly this interest is partly due to the opportunities afforded by conditions in the modern world. So many, varied and rapid changes impinge upon the attention of the most casual of contemporary observers that change itself might be considered the "normal" course of events and cultural stability "abnormal" were we to ignore the evidence provided by a longer time perspective. Within the total span of man's history, however, both stability and change appear to be equally characteristic facets of human adjustment. The persistence of well stabilized cultural patterns for very long periods is as impressive as the phenomenon of cultural change. But the present and immediate past affords us an unusual opportunity for observing in fuller detail many aspects of cultural change in process.

In the past, as well as the pres-

ent, one characteristic condition of cultural change arises when peoples with different modes of life come into intimate and continuous contact. Under these circumstances subsequent changes often occur in the culture of one or both groups. In other words, *acculturation* may take place. And, in the course of time, such changes may range all the way from the adoption by one people of a few borrowed traits, through cases where only certain areas of culture are affected by exotic influences, to those extreme instances in which, eventually, a sweeping transformation of the entire mode of life of one people results from prolonged contact with the culture of another.

Since, for the most part, the level of abstraction adopted by the anthropologist is that of identifiable cultural forms and patterns, he has been content to state the results of acculturation in his own terms. By and large, his attention has been focused upon the observation and description of cultural events such as changes in technology, dress, food habits, kinship systems, beliefs, language, etc., rather than upon psychological events. While he has recognized the psychological complexity of the acculturation process he has not been prepared, traditionally, to deal with this order of phenomena. Nevertheless, he has not hesitated, on occasion, to evaluate the results of acculturation by pointing to the new social, economic or moral problems that have arisen in a given population and even the personal maladjustments that have ensued. But such judgments usually have been based upon a common sense level of evaluation. With the rising interest of many anthropologists in problems that revolve around the relations between cultural variability and personality structure one of the questions that demands consideration on a scientific rather than a common sense level, is the relation of personality structure to cultural changes. An examination of the psychological aspects of acculturation plunges us at once into the heart of this problem.

We know, of course, that if any people undergo changes in their mode of life that eventuate in new or varied culture patterns that this implies some readjustment in the habits, attitudes and goals of the individuals concerned, that such processes of readjustment have to be motivated, and that learning is involved. These are the most obvious psychological events that any process of acculturation implies.[2] The further we pursue this topic, however, the more complex it becomes. For soon we are faced with the question of the psychological *depth* of these readjustments. This question, in turn, is intimately connected with such variables as the time span over which the acculturation process has taken place, the rate of acculturation, factors that involve qualitative aspects of the whole process, and the manner in which the relations between individuals of the two interacting groups are socially structured. Then there is the question of the differential psychological results to be considered. Everyone may not respond in the same way; women, perhaps, may be affected differently than men, etc. Consequently, the methods and techniques adopted in any investigation assume great importance, since we must depend upon them to provide us with data

[2] For a more detailed discussion of the psychological aspects of acculturation at this level see Hallowell (8).

that are significant for our problem. This is particularly the case if we wish to measure the psychological depth of acculturation; to discover among other things, whether there is, or is not, any basic change in the "modal" or "communal" aspects of the personality in a given society.[3] There is also a further question to which an answer would be desirable. Is it possible to obtain any evidence regarding the degree to which the individuals of a selected population are functioning successfully or unsuccessfully, when measured by some reliable standard of personal adjustment such as the level of psychological integration which they exhibit? If substantial evidence of this kind were available, it would be possible to examine the range and variability of personal adjustment in acculturated groups and compare them with one another.

So far as the question of the depth of the psychological readjustments brought about by acculturation is concerned I believe that one basic assumption we should make is suggested by the question: Why should the structural pattern of the modal personality of a group undergo any change at all, so long as it is possible to get along without radical change? Furthermore, if the *set* of personality structure is acquired and stabilized early in life and is not under conscious control, we hardly can adopt the hypothesis that changes in personality organization throughout a society would be among the *earliest* effects of acculturation. Indeed, it is hard to imagine how a psychological change of this depth could be brought about in less than several generations. Therefore it seems reasonable to emphasize the fact that, by its very nature, a typical personality structure, once established as an integral part of a socio-cultural system, is highly resistant to change. If this is so, then one of our fundamental hypotheses might be that the modal personality structure of a society would be expected to persist until conditions arose that *enforced* some change.

Thus, while all acculturation may be said to involve psychological readjustments in the sense that new habits must be learned or new attitudes and goals acquired, there is no reason to assume that such readjustments in themselves involve the psychological core of the personality. Surely iron tools may be substituted for those made of stone, or one style of dress replace another or a new language be learned without any radical effect upon personality organization. Let us say, then, that the culture of one group of people may be influenced in many ways by that of another without the people of the borrowing group undergoing any necessary change in their modal personality structure. Psychological changes of great depth probably are a consequence of qualitative and temporal aspects of the acculturation process that need special investigation. Among other things, we would like to know how far one language can displace another, a new world view or religion be acquired and sweeping technological changes occur *without* deep and penetrating psychological effects. And the related questions: Exactly what happens to the modal personality organization of a group

[3] A number of terms, not always completely synonymous, have been used for this concept. For a discussion of "group membership determinants" of personality see Kluckhohn and Murray (16, p. 39 seq.).

of people when it *is* affected by acculturation?

Certainly we cannot commit ourselves in advance and evaluate the results of acculturation *per se* as either good or bad. We hardly can say, for example, that it is altogether undesirable for a people who have never had any but stone tools to modify their ecological adjustment by the acquisition of iron tools. Only the most devout admirer of the "unspoiled native" or the "noble savage" could maintain such a view today. But it is another question, it seems to me, if it is demonstrable that, under certain conditions devastating psychological maladjustments result from acculturation.

In America we have had a long history of contacts between the native Indian population and peoples with a European cultural background. And because in a number of regions aboriginal units of this older population not only persist but still have not been culturally assimilated to our way of life excellent opportunities are afforded for the empirical study of acculturation processes and their consequences. Moreover, varying levels of acculturation are not only discernable in different tribal groups with entirely different cultural backgrounds; peoples originally belonging to the same ethnic unit now manifest somewhat varied stages in acculturation level. Although anthropologists have not developed precise indices for these stages, nevertheless it is possible to distinguish different acculturation levels in terms of the degree to which technological devices, house types, patterns of clothing, Christian belief, the English language, etc., have been taken over by Indians and made part of their present-day mode of life.

3. Investigation of the Ojibwa

Several communities of Ojibwa (Saulteaux) Indians have been the focus of my own studies.[4] Aboriginally hunters and fishermen and now numbering about 12,000 in all, the present-day Ojibwa are found scattered over a considerable area of the Northern United States and Canada. They represent an ethnic group, however, which originally shared a common linguistic and cultural background. Now these communities exhibit quite varied levels of acculturation. None, of course, live in a purely aboriginal state and to my knowledge few, if any, have been completely assimilated to western culture.

On the basis of evidence that I do not have time to present in detail, but which I shall characterize briefly, I have differentiated three levels of acculturation among the Ojibwa studied.

Level 1. The least accultured are the *Inland* Ojibwa (Saulteaux) of the Berens River in Manitoba (Canada). Some of them were still unchristianized when I first visited them in 1932. At the time I collected my information practically none of them spoke English.

Level 2. A somewhat more accultured group are the *Lakeside* Ojibwa of the Berens River. All these people have been Christianized for many years; they use no aboriginal dwellings, no native songs are sung, no ceremonies are performed. Such features are among those that distinguish them from their Inland kinsmen. In addition, some Indians of the Lakeside group speak English. All told, there are about 1,000 Ojibwa on

[4] Bibliography, Hallowell.

the Berens River. About 20 per cent of them are mixed bloods.

Level 3. Over the United States border in Northern Wisconsin there are a number of Ojibwa reservations. With the aid of a group of students I studied the *Lac du Flambeau* Ojibwa in 1946. They number between seven and eight hundred and about eighty per cent are mixed bloods. They are the most highly accultured of my series. Practically all of these Indians speak English, their children attend an excellent government school; some families have radios, some of the young men fought in World War II. For many years prior to World War I the Flambeau area was lumbered and the Indians were in close association with whites during this period, which had no parallel in Manitoba. Today the reservation is in the midst of the summer tourist area. Nevertheless, a small group of these people still cling to an aboriginal rite—the *Midewiwin*.

The major questions to which I have sought answers are essentially the following:

1. What are the typical psychological characteristics of the Ojibwa, those which we may reasonably infer to be rooted in their aboriginal culture and which are an expression of their modal personality type? This is our psychological base line.

2. What has been the effect of the acculturation process upon these psychological characteristics?

a. From a purely descriptive point of view we may ask: Do we find continuity or discontinuity in the modal personality picture exhibited by the Ojibwa at different levels of acculturation? Are the people at Flambeau, e.g., psychologically identifiable as Ojibwa despite their high level of acculturation? Or, have they been psychologically transformed?

b. We may likewise ask questions that have functional implications. What about the personal and social adjustment of individuals at these three levels of acculturation? Are the Indians at Flambeau, as compared with the Inland group on the Berens River, better integrated psychologically and functioning more adequately, or the reverse? Are sexual differentials to be noted? Before I proceed to a discussion of my data and the conclusions reached I must interpolate a brief resume of the methods and techniques employed to secure the data on which my conclusions rest.

4. Methodology and Techniques

One of the intrinsic difficulties which, in the past, has made it al-

Table I—Description of Samples

Age Groups	Inland			Lakeside			Berens River Total			Lac du Flambeau			Total (All Groups)		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
16-25	2	7	9	8	8	16	10	15	25	16	24	40	26	39	65
26-35	8	2	10	10	9	19	18	11	29	9	17	26	27	28	55
36-45	4	2	6	5	2	7	9	4	13	7	6	13	16	10	26
46-55	11	2	13	5	2	7	16	4	20	8	5	13	24	9	33
56-65	3	0	3	5	1	6	8	1	9	8	6	14	16	7	23
66 +	3	0	3	2	1	3	5	1	6	6	3	9	11	4	15
N	31	13	44	35	23	58	66	36	102	54	61	115	120	97	217
Mdn Age	46.4	24.8	40.5	33.0	29.4	32.3	41.2	28.2	34.5	38.4	29.3	32.2	39.9	28.7	33.4

most useless to seek answers to such questions as I have just raised, is the fact that no means were available for obtaining the kind of personality data that would furnish the basis for any reliable conclusions. This is where projective techniques enter the picture. A series of Rorschach protocols, in particular, does make possible the construction of a modal personality picture of a group as well as provide information on intra-group variability.

My major conclusions have been drawn from Rorschach protocols of adults obtained from Indians of the Inland, Lakeside and Flambeau groups.[5] The total series numbers 217 subjects, 120 men and 97 women, in age from 16 to 80 years. In all samples the median age of the women is lower than that of the men. Subjects from the Inland group, the least acculturated, number 44, from the Lakeside group 58 and from Lac du Flambeau 115. (Table I.)

By comparing the over-all picture of the three groups it has been possible to distinguish certain basic similarities as well as significant differences. In a paper first published in the RRE in 1942 (7) I pointed out certain differences between the Inland and Lakeside people of the Berens River that seemed attributable to differences in level of acculturation. The purpose of the field work at Flambeau in 1946 was to discover whether any of the tendencies noted were accelerated in a much more highly acculturated group, representing a third point on a continuum.

Another basic methodological difficulty has been the necessity of establishing some kind of psychological base line from which changes in personality organization can be measured. Suppose that we do manage to obtain reliable information on the modal personality structure of a group of acculturated Indians. How can we tell whether this psychological picture is a function of some stage in the acculturation process or whether it

[5] Children's records were also obtained by me from the Berens River Ojibwa and students, under the direction of Maude Hallowell and myself secured Rorschach protocols, T.A.T. records and free drawings from Flambeau children. But in this paper I am only incidentally concerned with these. The Rorschach protocols of Flambeau adults were collected at the same time and later scored by the following: Melford Spiro, now Ass't Prof. of Anthropology, Washington University, St. Louis, who secured most of the protocols from males; Erika Eichhorn Bourguignon, Instructor in Anthropology, Ohio State University, Columbus and Beatrice Mosner, Psychologist, Wayne Co. State Hospital, Detroit, who collected the protocols from the women and Ruy Coelho, Assistant, Division of Race Relations, UNESCO, Paris, who obtained some Rorschach protocols from adults and a large series of free drawings from children. The entire series of protocols was rechecked for scoring by Maude Hallowell who, in addition to collaborating in the field, has participated intimately in the preparation of this as well as other papers of the author which have dealt with the interpretation of the Flambeau Rorschach data.

I am also indebted to Dr. V. Barnouw (University of Buffalo, Dept. of Sociology and Anthropology) for allowing me to use the Rorschach records he collected independently at Flambeau in connection with his study of Acculturation among the Wisconsin Chippewa (Ojibwa) which only has been recently published (Bibliography (1)). In this excellent monograph will be found background material on the history and ethnography of the Ojibwa, a discussion of their differential reactions to acculturation as contrasted with certain Plains tribes, remarks (p. 21 note) on some sex differences in the authors Rorschach protocols, etc. An *Appendix*, comprising more than half the volume, is devoted to biographical material on two Flambeau men and one woman.

represents the persistence of the same personality organization that was characteristic of people of this ethnic group before acculturation took place? In short, how can we infer change, or continuity or modification in personality structure, without a psychological base line that represents either the pre-contact period or its nearest equivalent?

In order to help substantiate the psychological characteristics of the Inland Ojibwa as being the closest approximation to the aboriginal level for which direct empirical evidence was available, I studied the accounts of observers who had had the most intimate contacts with the Indians of the Eastern Woodlands in the seventeenth and eighteenth centuries. The characterological picture reconstructed from these sources was found to be in substantial accord with personal observations on the Inland Ojibwa as well as with the Rorschach data (11).

With the Rorschach data from the three groups analyzed and well in hand it was found possible, on a descriptive psychological level, to draw conclusions with respect to what had happened to the personality organization of these Indians in the acculturation process. But I wanted to secure more substantial evidence of what was happening in functional terms. What kind of personal and social adjustments were these Indians actually making at these different levels of acculturation?

In order to obtain information that would provide an answer to this question, I decided to make use of Helen H. Davidson's signs of adjustment as a measure (2). A set of such signs may be viewed as discrete yet significantly related indices to a broadly conceived norm of personality integration which approaches an optimum level of psychobiological functioning. Without some such standard, whether made explicit or not, we cannot measure degrees or levels of personal adjustment at all. We can only analyze and describe; judgments on any scale of unsuccessful-successful *functioning* are excluded. It is not necessary to maintain *a priori* that the particular list of signs referred to have universal validity. But, since these signs are actually among the most important criteria in interpreting any Rorschach protocol, there is every reason to believe that their indicative value is of a high order. Besides this, since these signs have been tested for internal consistency, the always present danger of evaluating the psychodynamics of personality functioning by some arbitrary standard, or one that has little actual reference to the realities of psychological integration, is avoided. Consequently, although so far these signs have been applied primarily to selected groups of school children, *in principle* there is no reason why they cannot be extended to adults in our culture and even to subjects with a different cultural background. Davidson recognizes this possibility and the larger problems involved when she writes: "Is it possible and desirable to construct a universal set of signs independent of age, or of intelligence or even of cultural background, or is it more feasible to construct a generalized set of signs which may be modified to suit the particular group being studied?" (p. 35). Thus one way to test out the full potentialities of the sign approach is to extend the use of the set which already has

been formulated as a measure of adjustment, to different and varied groups of subjects, including those with different cultural backgrounds, especially where other types of observation may be used as a check upon the results derived from the signs alone.

The Ojibwa Indian protocols presented one such possibility for the following reasons:

a) Quite aside from the use of signs alone as a measure of adjustment, the Rorschach results obtained have been pragmatically validated in much the same way as in clinical experience. Historical information, ethnographic data, direct observation of the people, some knowledge of life histories and the results of other projective techniques (TAT and drawings) have been found to be in essential accord with the group picture emerging from the Rorschach protocols.

b) The systematic use of the "sign approach" simply involves the quantitative ordering of the same subjects according to a common measure of adjustment. Since our fundamental hypothesis has been that the process of acculturation involves psychological readjustment and the problem has been to discover the nature, depth, and extent of such readjustment in three groups rated independently on a continuum of acculturation, some differences were expected.

c) The advantage of the sign approach for purposes of group studies is obvious. Each subject can be assigned a numerical value, the number of signs revealed by an examination of his Rorschach protocol. The group picture can be handled with respect to mean number of signs as well as in terms of the distribution of subjects with different numbers of signs. Davidson has listed seventeen signs. I have made use of only sixteen, because I have omitted any rating of the number of *Popular* answers. Since, as I have previously shown (10), there seem to be only a few "P" responses that remain constant from culture to culture and no quantitative analysis of the content of the Flambeau responses has yet been made, this seemed to be the most conservative course. Otherwise, some individuals might have been penalized for not giving the "P's" expected of persons rooted in Euro-American culture. Consequently, the figures I obtained run slightly lower than would have been the case if I had used seventeen signs.

d) Another advantage of the use of these signs for the comparative study of groups is that any semblance to psychiatric diagnosis or terminology can be avoided. The anthropologist, of course, is not prepared to make any such technical characterizations. In this respect he is in a worse position than the clinical psychologist, that is, from the standpoint of a severely conceived psychiatric orthodoxy. While subjects with a low number of signs may be poorly integrated for any number of reasons and even fall into quite distinct clinical groups, nevertheless, from a functional point of view they fall into a different category from those with a large number of signs. From the standpoint of group comparison, therefore, the discrimination made possible by the sign approach appears to be a positive asset.

In order to deal with the intragroup variability of subjects as objectively as possible, I divided them into five groups, i.e., those

having 0-3 signs, 4-6, 7-9, 10-12 and 13-16. In effect, this gives us a 5-point scale which represents an ascending series of levels of adjustment (V, IV, III, II, I) and of psychological integration. In the terminology I have used these run from *Badly* integrated subjects with 0-3 signs, through levels characterized as *Poor, Fair* and *Good* to *Excellent,* i.e., subjects having 13-16 signs. On this scale subjects having 7-9 signs are the mean group, which I have taken as representing a *Fair* level of adjustment. These verbal translations of levels of adjustment, discriminated on the basis of quantitative data are, of course, highly tentative and partly a matter of convenience for purposes of more meaningful psychological reference than levels I-V would be. Nevertheless, I should like to point out that my personal acquaintance with practically all of the Berens River subjects and many of those at Flambeau, does make the verbal characterization used meaningful, if any label of this kind is used at all. I should also like to emphasize a fact that will be apparent later. Any characterization of the social adjustment and psychological integration of these Indians must be viewed in terms of the limits set by their personality type, which happens to be of a highly introversive variety. I may add that composite profiles of Rorschach determinants were made for the subjects falling at each level of adjustment and that these reveal fairly consistent and distinguishable patterns at each level in the three locales. For after all, quantitative statements and verbal characterization alike are only approximations of the psychological reality to which the Rorschach protocols provide the most direct cues. A few characteristic details will suffice, I think, to give substantive Rorschach content to the variation in the patterns found when we move from subjects having a high number of signs to those having a low number, as well as offering justification for the verbal characterization employed to designate different levels of adjustment.

Total R shows a progressive decline. In the total Berens River subjects (102), for instance, those classified as having an *Excellent* adjustment gave 3 times the average number of responses as compared with those exhibiting a *Bad* adjustment. The number of M and FM also show a progressive decline and the relation between these determinants tends towards equality or FM > M. Fc and c decrease as do FC and CF. In the total Berens River series the average sum C at the 5 adjustment levels runs: 3.5, 1.4, 1.2, 0.4 and 0.0. The percentage of responses to the last three cards likewise declines. On the other hand, there is a progressive increase in F% and A%. With regard to intellectual approach W's are always greatest in number in the case of the best adjusted subjects and lowest in the *Badly* adjusted group, with a regular decline in between. But the percentage of W's is always over-emphasized to a slight degree in the *Badly* adjusted subjects. Dd+S show an irregularity in both absolute numbers and percentages at the different levels of adjustment.

For the treatment of a portion of the data obtained by standard statistical methods, I am greatly indebted to my friends, Dr. George K. Bennett and Dr. Alexander G. Wesman of the Psychological Cor-

poration, New York. They cannot be held responsible, of course, for any of the conclusions that I have drawn from the totality of the material.

5. The Psychological Consequences of Acculturation Among the Ojibwas

While space will not permit me to give a well-rounded, detailed and integral picture of native Ojibwa culture and personality, nevertheless, I believe that a brief characterization will be sufficiently intelligible for the purposes of this paper, if not altogether adequate.

In the first place, the culture of these Indians was relatively simple and homogeneous, as compared with many others in aboriginal America. The Ojibwa were food gatherers, hunters and fishermen; they had no agriculture or settled villages in the aboriginal period. From the standpoint of behavior one of the significant features of their culture was the absence of any institutionalized development which brought organized social sanctions to bear upon the individual. They were chiefless, courtless, jailess. Their society has been called "atomistic." The type of personality structure that we find was highly introverted. It functioned in terms of internalized controls; the individual felt the full brunt of responsibility for his own acts. Sickness and misfortune were thought to be the penalty for wrong doing and experiences of this sort provided the occasion for deep feelings of guilt. Ego support, especially in the men, was closely linked with a belief in the necessity for supernaturally derived assistance. This was the basis of psychological security and dreams were the prime medium of human contacts with supernatural beings. On the other hand, psychological security was never absolute since besides sickness and misfortune, even the strongest man might be menaced by sorcery. Therefore, it was necessary to be extremely cautious in interpersonal relations lest aggression be aroused and covert hostility released. So a surface amiability and emotional restraint, tinged with latent suspicion and anxiety were characteristic. With so little real give and take on an open and genuinely friendly basis, a high degree of projection colored interpersonal relations.

Now the Rorschach data of the Inland people are in substantial accord with this description. The ΣC averaged 0.5 while the achromatic score ($Fc+c+C'$) is greater (0.7) and the average percentage of responses to the last three cards is 38. On the other hand, the average M was 4. Accompanying this introversive picture is a very high F column, the average F% being 65. The average percentages for W, D, and d are all within the expected range but there is an overemphasis on the number of $Dd + S$ (15%), $M > FM$, the A% average is 49 and total responses average 25.

This composite profile of the Inland group approximates very closely to the personality picture which, on other grounds, seems generic for the Algonkian peoples of the Eastern Woodlands of the earliest contact period. Consequently, I believe it is legitimate to conclude that in the case of the Ojibwa a considerable amount of acculturation actually has taken place without any major change in their modal personality structure. Thus the Inland group may be taken as a direct psychological link

TABLE II—Composite Rorschach Profiles

Locale	Inland		Lakeside		Berens River Total		Lac du Flambeau	
N	44		58		102		115	
Mean No. of Signs	7.4		7.9		7.7		6.2	
Rorschach Items	Mean No.	Mean %	Mean No.	Mean %	Mean No.	Mean %	Mean No.	Mean %
R	25		29		27		17	
W	5	24	5	22	5	23	5	36
D	12	52	14	52	13	52	8	47
d	2	9	3	9	3	9	1	6
Dd+S	5	15	6	16	6	16	3	11
M	4		3		3		1	
FM	3		3		3		3	
m	.02		0.3		0.2		0.2	
k	0		0		0		0.4	
K	0.2		0.4		0.4		0.2	
FK	0.1		0.6		0.4		0.2	
F	16	65	18	60	17	63	7	45
Fc	0.4		1.2		0.9		0.8	
c	0.2		0.7		0.5		0.8	
C′	0.1		0.1		0.1		0.4	
FC	0.4		0.9		0.7		0.6	
CF	0.3		0.9		0.7		0.7	
C	0.02		0.2		0.1		0	
ΣC	0.5		1.7		1.2		1	
% 8, 9, 10		38		40		39		33
H	6		4		5		1	
Hd	4		3		4		2	
A	9		10		10		7	
Ad	3		4		3		2	
A%		49		47		50		53
Anat	0		0.5		0.3		1	

with the past. If this be true then psychological continuity, despite outward indications of acculturation, becomes an empirically established fact.

What has happened to this characteristic configuration of Ojibwa personality at the other two acculturation levels studied? The most striking fact is the continuity of the same basic psychological pattern through these stages of acculturation. There is a persistent core of generic traits which can be identified as Ojibwa. Thus even the highly acculturated Indians at Flambeau are still Ojibwa in a psychological sense whatever the clothes they wear, whatever their occupation, whether they speak English or not and regardless of race mixture. While culturally speaking they appear like "whites" in many respects, there is no evidence at all of a fundamental psychological transformation. On the other hand, the fact of psychological continuity must not be taken to imply that no modifications in the psychological structure of the Ojibwa have taken place. The nature of these modifications will direct attention to what is perhaps the most important conclusions that can be drawn from our data.

While the Rorschach picture at Flambeau retains certain generic features which we have noted in

the Inland group such as the low percentage of answers to the last three cards, the very low ΣC and the fact that the achromatic score is greater, there are some interesting differences to be noted. The average percentage of responses to cards 8, 9 and 10, for example, drops to 33, the lowest in all three groups; the average M's drop to 1, whereas the average FM's rise to 3. The F% drops to 45. It should be noted, however, that this latter change is not accompanied by either a higher color score or a greater number of M's. It indicated a weakening of the rigid control on which the Inland Ojibwa depends, without any compensating factors emerging. So the picture is one that reflects an apathy which is further substantiated by a tendency to respond with very simple W's.

While some of these trends are slightly perceptible in the Lakeside group, such as a tendency for FM to exceed M, in individual instances this is compensated by a gain in color. In the composite profile FM just equals M. The Lakeside group, in fact, exhibits a definite tendency towards a greater expansion in color score than any other group. (Av. ΣC 1.7 as compared with Inland 0.5 and Flambeau, 1.) At Flambeau, this incipient tendency has been reversed. On the whole, however, the Lakeside picture differs little from that of their Inland kinsmen. It is at Flambeau where we can see reflected in the Rorschach data an introversive personality structure being pushed to the limits of its functional adequacy. The whole trend is one that seems to be accelerating in a regressive direction. These people are being thrown back on their psychological heels, as it were. They are compelled to function with a great paucity of inner resources. There is a kind of frustration of maturity. This could be further demonstrated by an examination of the children's records. Those of adults are too much like them and the children are badly adjusted as well. (For a statistical evaluation of this significance of inter local differences see Table III, compiled by Dr. Solomon Diamond.)

TABLE III. Probability of a chance difference as great as that observed, determined from chi-square values of four-fold tables, in which the criterion for dichotomy is as close as possible to the median for the 3 groups combined.

Category, and criterion for dichotomy			Flambeau-Lakeside	Flambeau Inland	Lakeside Inland
R	<	19	.001	.001	• .2
W	<	5	.8	• .8	• .3
W%	>	25.5	.01	.01	.8
D	<	10	.001	.001	• .4
D%	<	50.5	.01	.1	• .5
d	<	1	.001	.001	.7
d%	<	5.5	.001	.01	• .9
dd+s	<	2	.001	.1	• .2
dd+s%	<	10.5	.3	.6	• .7
M	<	2	.001	.001	.1
FM	>	3	.5	.02	.2
FM	≧	M	.001	.001	.1
m	<	1	.2	• .1	• .01
k	<	1	.001	.01	....
K	<	1	.02	.4	• .3
FK	<	1	.02	• .1	• .001
F	<	10	.001	.001	• .6
F%	<	50.5	.001	.001	.02
Fc	<	1	.02	• .05	• .001
c	>	1	.3	.001	.02
c'	>	1	.01	.02	• .8
FC	>	1	.9	.02	.6
CF	<	1	.7	• .05	• .05
CF	<	FC	.7	• .98	• .7
C	<	1	.001	....	• .1
8,9,10%	<	35.5	.001	.001	.8
A%	<	50.5	.6	.6	• .95

• The relationship stated as the criterion for dichotomy is more likely to occur in the first group named of each pair, except where an asterisk indicates reversal.

So much then for the generalized picture we get from a qualitative examination of the Rorschach protocols of the three Ojibwa groups. An analysis of the same body of data in terms of the signs of adjustment worked out by Helen Davidson, makes it possible to secure quantitative information which measures more precisely the trend towards a lower level of psychological integration that is taking place in the Flambeau population.

The number of signs for each subject being determined according to the criteria used by Davidson, the distribution of these values was made separately for each sex in the Inland, Lakeside and Flambeau groups in order to discover whether sex differences were of significance. "The means, standard deviations, and standard errors of the means were computed. Differences were in each case divided by the standard errors of the differences to obtain the critical ratio, and the probability of chance occurrence of such differences was determined by reference to the Table of the Normal Probability Integral. The p values given are those corresponding to the areas under both tails of the distribution. Since the number of cases was small (particularly the Inland Female Group) N-2 was used in computing the standard deviation to allow for the restriction in degrees of freedom."[6] Since differences between sexes tend to be small and approach significance only in the case of the Inland group, as will be seen in Table IV[7] the sexes were combined for subsequent statistical treatment. Table V[8] presents the basic data on mean sign differences and variability as exhibited by the three groups of subjects. It will be noted that the mean number of signs for both the Inland and Lakeside Groups fall within the sign range that I have taken to represent a Fair level of

TABLE IV. Adjustment signs of sex and tribal groups.

No. of Signs	Inland		Lakeside		Flambeau	
	M	F	M	F	M	F
15	0	0	0	1	0	0
14	0	0	0	0	0	0
13	0	0	4	2	1	0
12	1	0	2	2	1	1
11	2	0	1	1	2	2
10	4	1	3	2	4	4
9	8	2	4	4	1	7
8	3	2	2	2	10	7
7	7	2	7	0	4	7
6	2	2	1	2	8	9
5	1	1	4	4	8	8
4	0	2	6	2	5	5
3	1	0	1	1	7	8
2	2	1	0	0	2	2
1	0	0	0	0	1	1
N	31	13	35	23	54	61
M	7.8	6.5	7.7	8.3	6.3	6.3
S.D.	2.52	2.35	3.14	3.31	2.61	2.59
S.D. (M)	.47	.72	.55	.72	.36	.34

TABLE V. Adjustment distributions by Locale.

No. of Signs	Inland	Lakeside	Flambeau
16	0	0	0
15	0	1	0
14	0	0	0
13	0	6	1
12	1	4	2
11	2	2	4
10	5	5	8
9	10	8	8
8	5	4	17
7	9	7	11
6	4	3	17
5	2	8	16
4	2	8	10
3	1	2	15
2	3	0	4
1	0	0	2
N	44	58	115
M	7.4	7.9	6.3
S.D.	2.58	3.32	2.60
S.D. (M)	.40	.42	.24
S.D. (S.D.)	.27	.31	.18

[6] Quotation from Memorandum of Geo. K. Bennett.
[7] Compiled by Bennett and Wesman.
[8] Compiled by Bennett and Wesman.

general adjustment, whereas the Flambeau Indians fall below this. Despite the fact that, without further investigation, the comparison may be taken only as suggestive, it seems worth while to call attention to the fact that in the various groups of children reported by Davidson (3) the range in the mean number of signs runs from 6.85 in the case of a group of "Unsuccessful High School Boys" to 11.34 in the case of a few "Successful High School Girls." In the terminology I am using here the former would fall at the Poorly integrated level, the latter at the Good one even when we take into account the fact that Davidson used 17 signs while I used 16. Furthermore, considering the fact that Davidson subjects are drawn from school populations while mine are drawn from an essentially random sampling of the adults of a general population with an Ojibwa cultural background, it seems to me that the sign approach merits further exploration on a comparative basis.

This conclusion is further supported by the fact that, as the following tabulation[9] shows, a statistical evaluation of the mean differences exhibited by the three Indian groups indicates that the fewer signs of the Flambeau group may be taken to be significant. On the other hand, the observed difference between the Inland and Lakeside Indian could readily have arisen by chance.

	D	S.D.	CR	2P
Inland–Lakeside	− .5	.585	− .85	.39
Inland–Flambeau	+1.1	.466	+2.36	.02
Lakeside–Flambeau	+1.6	.488	+3.08	.002

Turning now to intra-group differences in variability (Standard Deviation) the following tabulation[10] indicates that the somewhat greater variability in the Lakeside group as compared with the other two, approaches statistical significance.

	D .	S.D.	CR	2p
Inland–Lakeside	.74	.413	1.77	.08
Inland–Flambeau	.02	.325	.06	....
Lakeside–Flambeau	.72	.355	2.03	.04

TABLE VI. Percentage of subjects at different levels of adjustment in Ojibwa acculturated groups.

No. Signs	Characterization	Inland	Lakeside	Berens River Total	Lac Du Flambeau
13-16	Excellent	0	12	7	1
10-12	Good	18	19	19	12
7- 9	Fair	55	33	42	31
4- 6	Poor	18	33	26	38
0- 3	Bad	9	3	6	18
		100	100	100	100

From the standpoint of adjustment I think it can be maintained that in the Lakeside group, where the process of acculturation has proceeded rather slowly it has been possible for individuals to become psychologically readapted to the exigencies of the situation within a wider range of possibilities than in the Inland group or at Flambeau. This is suggested by the variation in each of the three groups of the percentage of subjects at the five levels of adjustment discriminated. (Table VI[11].) In the least

[9] Compiled by Bennett and Wesman.

[10] Compiled by Bennett and Wesman.

[11] In a previous publication (9) I referred to what, at first glance, might appear to be comparable figures which are also cited by Melville J. Herskovits (15, p. 57). While at that time I had the same general problem in mind, the former figures were based on a larger number of signs, some of which have been

acculturated Inland group the range is narrow, since 55% of the subjects fall in the median or Fairly well adjusted category, none fall in the Excellent and only 9% at the Badly adjusted level. This is the group, too, it will be recalled, in which the typical features of the Ojibwa personality structure are most clearly apparent. The characteristic cultural pressures which defined social interaction no doubt limited the range of psychological integration as well. In this connection, it is a striking fact that the highest percentage of subjects (12%) who show an Excellent level of psychological integration were found in the Lakeside group. At Flambeau, while the spread is great, the largest percentage of subjects (38%) falls into the Poorly adjusted category. In contrast to the Lakeside group it would seem that there must be factors at work at Flambeau which set barriers to the achievement of personal adjustment on higher levels. A simple quantitative comparison which dramatizes the situation at Flambeau can be derived from Table VI by contrasting the percentage of subjects in each group who have 7 or more signs. In the Inland group this figure is 73%, in the Lakeside group 64%, while at Flambeau it is only 44%.[12] In other words, Flambeau is the only one of the three groups in which more than half (56%) of the subjects fall into the Poor and Badly adjusted category.

With some hesitation I should like to mention another contrasting fact with respect to intra-group variability which appears to differentiate the Berens River Ojibwa from those at Flambeau. When the subjects are classified into three ascending age levels (16 to 35 yrs., 36 to 55 yrs., and 56 yrs. and upwards) and the percentage of individuals that have 7 or more signs of adjustment contrasted with the proportion having 6 signs or less in each age group, it appears that the pattern at Flambeau is almost the reverse of that found in the Canadian groups. For the combined Berens River subjects the percentage of those at each successive age level having 7 or more signs follows the sequence 54, 76, 100. In the Flambeau group there is no comparable tendency. In fact, the percentage of subjects with 7 or more signs is 45% or less at *each* age level. Since these data have not been statistically tested they may not be significant. Nevertheless, from a psychological point of view, the relatively small percentage of subjects 36 years and upwards that do not even fall into the Fairly well adjusted category at Flambeau possibly provides a quantitative hint to what, on other grounds, I have referred to as a frustration of maturity. Nor can I dismiss the possibility that the quantitative fact noted likewise illuminates one of the conditions that may account for the disturbing picture presented by the Flambeau children. This has been documented by the Rorschach data collected and analyzed by Dr. Blanche Watrous (18), the conclusions drawn from TAT records of the same children by Dr. Wm. Caudill (1) and, more recently the inferences made from a blind analysis of the drawings of Flambeau chil-

found to be less reliable than those now used. And the results were grouped into 4 categories. The tentative conclusions reached at that time are superceded by those stated in this article.

[12] Chi-square from such a tabulation equals 12.60, significant at the 1% level of confidence.

dren by Miss Michal Lowenfels[13] (17).

It is obvious, I believe, from the foregoing data that although three levels of acculturation can be discriminated among the Ojibwa studied and that while some minor qualitative differences in the overall Rorschach pattern can be discerned when we compare the Inland and Lakeside groups, on the whole the major psychological contrast, as clearly indicated by the signs of adjustment, lies between the Berens River Ojibwa considered as a whole and the Flambeau Ojibwa. It must be concluded, therefore, that the tendency towards a low level of psychological adjustment at Flambeau is not to be attributed to "acculturation" considered abstractly or as some inevitable force, but to a set of complex factors that we know too little about and which are extremely difficult to analyze. Apparently there have been differential factors operative in the situation at Flambeau which have not been present on the Berens River.

I cannot of course, go into an extended analysis here of all the various factors that may account for the breakdown of the old personality structure of the Ojibwa under the pressures of acculturation at Flambeau. But I may say that one of the most crucial factors involved seems to be the lack of any positive substitute for that aspect of the aboriginal value system that had its core in religious belief. As I have pointed out there was once an intimate connection between the content of Ojibwa beliefs, the source of their psychological security and the optimum functioning of inner controls in their psychic economy.[14] While this inner control is still present at Flambeau it has been modified in a regressive direction so that it easily breaks down. In actual behavior evidence of this is to be seen in the tremendous incidence of drunkeness and juvenile delinquency on the reservation and the fact that externally applied controls seem quite ineffective. The behavior of many Indians is also symptomatic of the terrific inner struggle which many individuals are experiencing in reaction to the present paucity of their inner resources. An apathy is created which they cannot overcome. They are attempting as best they may, to survive under conditions which, as yet, offers no culturally defined values and goals that have become vitally significant for them and which might serve as the psychological means that would lead to a more positive readjustment.

Finally, I should like to emphasize the fact that the psychological consequences of acculturation among the Ojibwa that I have described must not be generalized to include all American Indians or aboriginal peoples elsewhere that have come into contact with western civilization. While we do not have any precisely comparable data from other groups I can think of peoples where the contrary situation may exist.

The aim of this paper has been to call attention to the expanding usefulness of projective techniques and to demonstrate how the Ror-

[13] Dr. Watrous (North Shore Health Resort, Winnetka, Ill.) and Dr. Caudill (Dept. of Psychiatry and Mental Hygiene, School of Medicine, Yale University) both participated in the field work done at Lac du Flambeau in 1946. Mr. Ruy Coehlo collected the drawings which Miss Lowenfels, one of my present students at the University of Pennsylvania, analyzed.

[14] For further details see Hallowell (13).

schach, in particular, has been used to attack problems in an area of research far removed from the clinic and yet not entirely divorced from the values that are growing out of clinical work. For if we can measure the outcome of acculturation in concrete instances with respect to its effects upon the psychodynamics of personal integration, in the end we may learn a great deal about the instrumental values of *different* cultural systems in relation to human adjustment. And we may be on our way to discovering the essential elements that are necessary in any socio-cultural system in order that man can most nearly achieve an optimum level of psychobiological functioning.

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Rorschach Pattern of Normal Subjects of Graded Intelligence

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Although the Rorschach technique is firmly established as a diagnostic aid in psychiatry and is finding increasing application in various fields of sociologic study, it remains difficult to find a coherent statement concerning the range of responses in the general population. Though many references are made to the performances anticipated from symptom-free individuals, (1, 3, 6) and several systems of diagnostic signs (2, 4, 7) have been formulated on the basis of such knowledge, the control subjects from whose responses the conception of "normal" or "average" has been constructed, apparently have often been chosen from a limited segment of the population, as noted by Rapaport in his own research (5). At any rate, the utilization of the Rorschach procedure in a malarial research project (8) with non-psychiatric patients raised a number of questions concerning the validity of anticipated standards as found in the literature. The deviations were particularly marked in subjects of low educational or socio-economic status whose patterns were scarcely distinguishable in many respects from those presumed by workers in the field to be characteristic of the psychoneurotic patient. It was found necessary to compare the performances of the experimental subjects with those of a series of 100 control subjects: a series constructed to be highly representative of the male population of the United States wartime Army, specifically in regard to intelligence distribution. The analysis of the Rorschach responses of this control series can therefore serve to help answer a number of pertinent questions concerning the range of performance of the general population. However, the organization of the data in this study is directed particularly towards the following problems: (a) The variation of the Rorschach responses and patterns with intelligence, and the analysis of the trends disclosed; (b) the extent to which an ideal personality configuration, such as is formulated by Klopfer and Kelley (3) is approximated within the average population, and the extent of the deviations from this ideal; and (c) to check the validity of several systems of diagnostic signs (2, 7) which have been presented in the literature.

PROCEDURE

The subjects of this study were all members of the enlisted personnel of the 18th United States Army Medical Corps General Hospital stationed in the Fiji Islands, during 1943-1944. Since it was quite possible that prolonged overseas service could have had an effect on the Rorschach pattern, half of the sample was composed

of "old" members of the detachment, who had been overseas approximately two years, and half of "new" men, who had been overseas less than three months at the time the study was conducted. The subjects were all male. Their age-range was from 19 to 37, with 70 per cent of the cases falling between 19 and 28; the median age was close to 25 years.

Certain precautions were taken to insure typical sampling. A group was sought which would be as representative of the entire army as possible under the circumstances, in order that the findings could be applied to a very large segment of the American male population. The only item available for use as a selective factor was the score on the Army General Classification Test (AGCT), which is administered to every soldier shortly after enlistment. Accordingly, the group was modelled closely upon the distribution of AGCT scores which the army psychologists had constructed upon the basis of the performance of a very large number of unselected enlisted men. The features of this distribution are as follows: roughly 7% of men tested obtain scores of 130 or higher (Grade I); the next 24% fall in Grade II (scores between 110 and 129); 38% comprise Grade III (90 to 109); 24% make up Grade IV (70 to 89); the final 7% are found in Grade V and obtain scores below 69. The detachment under study was first subdivided into "old" and "new" groups, according to length of overseas service, and then into the five AGCT categories indicated. The sampling was completed by making a random selection within each category. The final sample consisted of 100 men, 50 with two years of overseas service and 50 with less than three months of overseas service, each group being further subdivided so that 7% had AGCT scores at the Grade I level, 24% at the Grade II level, and so on. In this manner, a sample was obtained which closely resembled the enlisted personnel of the United States Army in World War II, insofar as AGCT distribution was concerned. Whatever else the AGCT measures, it reflects the degree of education fairly well, for in this group of subjects the relationship between years of education and AGCT score could be expressed by a coefficient of correlation of +0.84.

The Rorschach test was individually administered to the 100 subjects over a period of three weeks. The procedure followed closely that outlined in Klopfer and Kelley (3), although the "Limits Phase" was undertaken only when there was obvious blocking or misunderstanding of instructions in the main performance. The subjects were ordered to report for testing according to a fixed schedule by the Commanding Officer and informed that the project was part of the malaria research with which many subjects were cooperating as controls for physiologic tests.

Certain additional features of the group may be of interest. Although the sample covered a wide range of educational background and civilian occupation, it appeared weighted in the upward direction. With respect to education: 23% of the group had at least one year of college, 55% had some high school training, and the remaining 22% had three to eight years of grade school education. This compares rather favorably with the national figures (9). With respect

to occupational background: 33% had semi-professional or managerial status or were skilled manual or clerical workers, and only 14% were unskilled laborers. This again compares quite favorably with the national data as reported by the United States Census Bureau (9). It is probable that this is the effect of the special requirements of a medical unit as well as of general military selection. At any rate, in considering the results, it is necessary to realize that the sample is somewhat superior to the American male population as a whole, in respect to educational, economic, and social status. An additional differentiating factor is that the group is largely urban, for only about 10% were farmers or farm laborers.

RESULTS

Treatment of the results of Rorschach research is complicated by the fact that the Rorschach picture depends heavily upon the character of the *interrelationships* between the various factors studied. The absolute numerical size of a given factor is often not very revealing. Furthermore, a statistical compilation of averages alone can have little meaning, because a given factor in the Rorschach test has different significance in different total patterns. Simple quantitative analysis of the data would not be decisive in gaining an understanding of the Rorschach in relation to normal personality. Accordingly, the quantitative data will be summarized primarily to permit the reader to gain some view of the actual performance of the subjects. Much more emphasis will be placed upon the treatment of the relational aspects of the data in the second half of the study.

In the analysis of the relationships between the Rorschach and intelligence as measured by the AGCT, it was found convenient to reduce the five AGCT levels to three categories which were more amenable to statistical treatment. Levels I and II were combined to comprise a "superior" group; level III was retained as an "average" group; levels IV and V were combined into an "inferior" group. Hereafter these combined AGCT groups will be referred to as Group A, Group B, and Group C. Group A, including all individuals with AGCT scores over 110, comprises 32% of the cases. Group B, ranging from 90 to 109, takes in the middle 38% of the cases. Group C, which contains subjects with AGCT scores below 89 consists of the lower 30% of the sample. The "old" and "new" groups of subjects were treated independently until it became apparent that *duration of overseas service was not a significant differentiating factor* in the production of Rorschach patterns. The questionable differences between the "old" and "new" groups were generally small in size and inconsistent in direction. Therefore the division of subjects into "old" and "new" groups was abandoned, making the actual numerical size of the AGCT sub-groups analysed, 32 for Group A (AGCT scores over 110), 38 for Group B (scores between 90 and 109), and 30 for Group C (scores below 90). While these numbers are not large, they are the result of a carefully controlled sampling, organized to resemble closely the general AGCT distribution of the Army as a whole.

QUANTITATIVE DATA

Tables I to V present a sum-

TABLE I—Central Tendencies of Various Rorschach Factors, According to AGCT Group

Factor	Group A		Group B		Group C	
	Mean	Median	Mean	Median	Mean	Median
R	25.6	16	14.2	11	13.7	10
F%	42.5	41	51.1	50	51.7	54
A%	52.8	50	56.7	56	52.7	55
P	3.8	4.2	3.6	3.9	3.7	4.1
O	4	0	0.7	0	0.4	0
Sum C	2.3	1.8	1.0	0.7	1.2	1.0
W%	38	33	48	46	54	53
D%	50	53	42	50	37	40
d%	2	0	1	0	3	0
(Dd+S)%	10	7	9	8	6	0
M	2	1.8	1	0	0.8	0
FM	4.3	3.3	3.2	2.6	2.8	3.1
m	0.12	0	0.24	0	0.14	0
k	0.18	0	0.14	0	0.07	0
K	0.06	0	0	0	0.07	0
FK	0.7	0	0.2	0	0.3	0
Fc	1.5	1.8	0.5	0	0.5	0
c	0.06	0	0.08	0	0.07	0
C′	0.28	0	0.19	0	0.17	0
FC	3.0	2.0	0.6	0	0.6	0
CF	0.9	0	0.6	0	0.8	0
C	0.5	0	0.4	0	0.5	0

mary of the quantitative aspects of the responses.

Tables I and II show the analysis of the responses in terms of the distribution of the significant Rorschach factors throughout the three AGCT groups: Table I in terms of central tendency (means and medians), and Table II according to the percentage of each group that showed different levels of productivity of these factors.

It is apparent from examination of Tables I and II that "intelligence," at least as it is measured by the AGCT, has a strong effect upon the general pattern of the Rorschach performance. Scattered through the Rorschach literature are many references to this facet of the problem of Rorschach analysis. However, the extent of the influence, as well as the complex manner in which it works itself out, is highly interesting. Not all the factors show the differential effect of intelligence level. Those most clearly influenced by the AGCT level of the subjects are: R, F%, sum C, W%, D%, W : M, M, FM, FK, Fc, and FC; productivity of the remaining factors is apparently unaffected by differences in intelligence. Most striking is the observation that the effect of differential level of intelligence is apparently neither linear nor cumulative. It might be expected that intelligence would increase productivity of various significant factors as we move from the inferior, through the average, to the superior group. The actual picture, however, shows that *differential intelligence appears to split the sample into two contrasting groups.* On the one hand, the superior group (Group A) shows to advantage on almost every significant factor; on the other, the average and inferior groups (Groups B and C) are at a lower level of productivity but differ very little from each other. It is as if the Rorschach

TABLE II—Percentages of AGCT Groups Showing Differential Productivity of Various Rorschach Factors (Critical Percentages)

Factor	*Group A*	*Group B*	*Group C*	*Factor*	*Group A*	*Group B*	*Group C*
R				k			
0-12	28	61	67	0	75	74	83
13-25	41	34	23	1-	25	26	17
26-	31	5	10	K			
P				0	97	100	97
4 or more	60	50	53	1-	3	0	3
O				FK			
1 or more	47	35	20	0	60	79	83
Sum C				1-	40	21	17
1 or more	69	45	44	Fc			
Rviii, ix, x/R				0	25	60	57
0-30	16	34	26	1-	75	40	43
30-39	41	23	47	C'			
40-49	22	22	20	0	59	82	83
50-	22	21	7	1-	41	18	17
W:M				c			
3:1 or more	63	84	93	0	94	92	93
M				1-	6	8	7
0	28	53	57	FC			
1-2	34	32	37	0	28	71	67
3-	38	14	7	1-2	44	18	27
FM				3-	28	10	7
0-4	50	74	83	CF			
5-	50	26	17	0	63	71	60
m				1-	37	29	40
0	75	86	77	C			
1-	25	14	23	0	94	95	97
				1-	6	5	3

test requires a certain *minimum* of intelligence to yield performances that are adequately productive, and that persons of average or inferior intelligence together lie below this necessary minimum. Another way of expressing this finding is that the effect of intelligence appears to be considerable as we move from a superior to an average group, but has relatively little effect in differentiating the average from the inferior group within the range tested.

Although this finding is generally true of the Rorschach pattern as a whole, there are a few factors which appear to be more sensitive to the effects of intelligence. These are O, the W : M ratio, W% and D% and productivity of M and FM. Here we find a kind of cumulative effect, so that the lower the AGCT score, the poorer the productivity on these factors.

The second major observation concerns absolute magnitudes, rather than the general trends in the data. Even a large proportion of the superior group appeared to be surprisingly unproductive on the Rorschach. Table II indicates this more clearly than Table I. Reading down the Group A col-

umn of Table II and considering only the more significant factors, it is found that: 29% of Group A show twelve or less responses; 40% give three or less popular responses; over 50% give no original responses; almost two-thirds display an unfavorable ratio of whole to human movement responses; 28% yield no M at all, and about 60% give two or less M; 28% yield no FC and another 44% only one or two such responses; the shading area is even more sparsely covered. These unexpectedly low levels of productivity become even more pronounced in Groups B and C. The significance of these findings will be discussed below.

In order to gain an approximation of the significance of this study for clinical diagnosis, the material was treated according to the Harrower-Erickson system of "neurotic signs" (2) and also in terms of the clinical rating system devised by Ross and Ross (7). The results are given in Tables III, IV, and V.

TABLE III—Percentages of AGCT Groups Showing the Harrower-Erickson "Neurotic Signs"

Sign	*Group A*	*Group B*	*Group C*
R	35	64	70
M	50	80+	87•
FM>M	65	74••	74••
F%	35	55•	57•
A%	56•	66•	73•
Fa	35	63•	44••
FC	53	81•	87•
CS	25	50•	47•
SS	20	26	13

• Within neurotic range
•• Closer to neurotic than to normal

These results raise serious questions as to the validity of such diagnostic signs when utilized for persons of less than superior intelligence. Group A, on the whole, yields data which is comparable to that reported by Harrower-Erickson and Ross and Ross for their normal control groups. Groups B and C differ sharply from Group A but very little from each other, and both distinctly display a "psychoneurotic" pattern. Table III shows that a significant proportion of the subjects in Groups B and C fall within the neurotic range on seven of the nine signs; that is, there was as high an incidence of "neurotic signs" as in Harrower-Erickson's group of neurotic patients. Table IV shows that roughly three-quarters of the individuals in Groups B and C showed five or more neurotic signs. Table V reports similar results found from utilization of the Ross and Ross system of ratings. Groups B and C fall well within the neurotic range on the instability rating. It is interesting to note that the "disability" rating is not affected as markedly as is the "instability"

TABLE IV—Percentages of AGCT Groups Having Different Numbers of the Harrower-Erickson "Neurotic Signs"

No. of Signs	*Group A*	*Group B*	*Group C*
0	9	2	0
1	6	2	3
2	16	8	7
3	22	2	3
4	13	8	17
5	9	16	23
6	16	16	13
7	0	29	17
8	3	11	17
9	6	2	3
0-4	66	22	30
5-9	34	78	70

TABLE V—Mean "Clinical Ratings" According to Ross and Ross

Rating	*Group A*	*Group B*	*Group C*
Instability			
Mean	11.7	19.2	18.2
Med	10.0	21.0	18.0
Disability			
Mean	4.6	8.2	8.0
Med	3.5	9.0	10.0

rating by the intelligence factor; all three groups obtain ratings which suggest that they are free of organic pathology.

The analysis of the quantitative aspects of the study can be summarized into four main results, which will be discussed in the succeeding section of this paper.

(1) Intelligence level, as approximated by the AGCT, has a strong effect upon Rorschach productivity both in terms of absolute and relative magnitudes of the significant Rorschach factors.

(2) It appears that the Rorschach test requires a certain minimum of intelligence to yield performances that are adequately rounded and productive. This level cuts through somewhat above "average" intelligence. There is a sharp division between the superior AGCT group as against the average and inferior groups, rather than a gradual gradation through the three groups.

(3) A high proportion of even the superior group is unproductive on certain aspects of the test, to an extent far beyond anticipated from the literature.

(4) The systems presented by Harrower-Erickson and Ross and Ross to facilitate diagnosis of psychoneurosis operate adequately only for persons of above average intelligence, and break down badly when used with subjects with average or below average intelligence.

RELATIONAL ASPECTS

Although the analysis of the quantitative data is highly informative, it is not decisive for a test such as the Rorschach. In the following section, the analysis of the material will be concerned with the configurational patterns of the individual performances. The analysis of the qualitative aspects of the data followed the general plan for Rorschach interpretation outlined by Klopfer and Kelley (3). A statistical concept of normality has no real meaning in the Rorschach technique, and further, any comparison of the responses obtained from the three subgroups with a theoretical configuration of balanced personality structure is clearly an arbitrary procedure. However, it has the merit of offering a definite basis for comparison of the patterns produced by the subgroups, and for forming an impression of the extent to which these patterns correspond to standards which have been presented as typical of the adult population. Accordingly, the first step in the analysis consisted of the comparison of the data obtained from each of the subgroups with the configuration of the "ideal personality structure" offered by Klopfer and Kelley, to learn to what extent this "ideal" configuration is actually approximated within a typical segment of the population. Next the material was analyzed according to the salient features of the schema for interpretation of the "general personality structure" suggested by Klopfer and Kelley, and this analysis was continued through the "emotional aspects" of the personality structure. As there is no meaningful way to present this type of material in distributional form, and as we are primarily interested in frequency of occurrence rather than in central tendency, the procedure followed was to calculate throughout the percentage of each of the three AGCT groups which fell within each of the categories studied.

The standards set by Klopfer and Kelley for their theoretic "ideal personality structure" are presented in Table VI together with the

TABLE VI—Correspondence of the Three AGCT Groups with "Ideal Personality Structure"

Criteria of Klopfer and Kelley	Percent of each AGCT group conforming to criteria		
	Group A	*Group B*	*Group C*
I. *The Center Area*			
1. F% should not exceed 50	66	45	40
2. FK and Fc together should approximate ½ F	34	17	20
3. F plus Fc plus FK should not exceed 2/3 of total	81	76	63
II. *Movement Responses*			
1. Over one M indicates better than average intelligence	47	16	17
2. Five or more M indicates high intelligence	13	8	7
3. M should be greater than FM, although a slight excess of FM is permissable when M is 5 or more	50	36	37
4. Less than 3 m shows absence of inner conflict	97	97	97
III. *Texture and Color*			
1. There should be some color responses	88	61	67
2. Achromatic responses should not outnumber chromatic by more than 2:1	87	87	93
3. Sum of CF and C should not outnumber FC	87	74	70
4. C responses, where present, should never be crude but be C (des) or C (sym) types	100	100	100
IV. *Manner of Approach*			
1. An even approach will include the following percentages of the various location categories:			
W 20-30	19	16	7
D 45-55	28	24	14
d 5-15	25	16	20
Dd and S 0-10	63	65	65

percentage of each of the three AGCT groups conforming to these standards.

The general paucity of responses, as can be seen in Table VI, particularly in the more refined use of color, shading and movement, sharply limits the degree of correspondence between all of the groups and the ideal standard. These limitations are most apparent in Groups B and C as would be anticipated. Again, as in the first half of the study, the group with inferior intelligence (Group C) is not limited to any appreciably greater degree than the group with average intelligence (Group B).

Area I of Table VI, concerned with form quality, shows clear differentiation of the three groups by the factor of intelligence. It should be noted, however, that even Group A displays relatively poor modification of Form by the use of texture and shading.

Area II deals with the inner sources of arousal and motivation. According to the literature, a person of average intelligence should produce at least one human movement response and a person of superior intelligence at least 5 M. There is low M productivity in all three groups. Half of Group A had but one or no M responses, and only 13% gave 5 or more M responses, even though all were of superior intelligence and were at least relatively stable individuals. Further, unless the number of M responses is very large, a well-balanced individual should show a preponderance of M responses over FM. Even half of the subjects in Group A gave more FM than

M. Almost 2/3 of Groups B and C gave more FM than M responses. All three groups were virtually free of "inner conflict" according to the criteria of having less than 3 m responses. However, it seems likely that this latter result is simply another indication of the failure of most subjects to utilize the more refined and subtle indicators.

Area III, concerned with color and texture, appears to be the area of the greatest conformity with the "ideal" standard. It is possible that this may indicate that the subjects were better adjusted in their interpersonal relations than in possession of rich inner resources. In general, Group A shows fair approximation with good adjustment, but once again Groups B and C form a lower level but differ little from each other.

In Area IV, which deals with "manner of approach," the subjects as a whole showed a very poor correspondence to the anticipated or ideal selection of location categories. The essential deviation lies in the overproduction of W and the paucity of D and d in all three groups. Very few individuals in any of the groups utilized rare detail or white space to any marked degree.

Examination of the total pattern offered by each of the 100 subjects for reasonable approximation to the "ideal" standard given by Klopfer and Kelley may be more pertinent than survey of individual items. The criteria were met by very few subjects. Only 19% of Group A, 5% of Group B, and 7% of Group C showed even an approximation of the standard. The most striking difficulties which prevented individuals from being classified as well-balanced were: over production of W; the predominance of FM over M; insufficient use of texture; inadequate or unbalanced use of color. From this study, it appears that persons of average intelligence or less, rarely yield well-balanced Rorschach patterns, and that even subjects of superior intelligence conform to such ideal configurations infrequently.

In the next phase of the analysis of the data, the findings for each AGCT group were organized according to the significant elements of the interpretational schema suggested by Klopfer and Kelley. Table VII presents the features selected for treatment and the percentage of each AGCT group falling within the category described.

From Table VII it is possible to see something of the manner in which the significant elements of the general personality structure are distributed among the individuals of the three AGCT groups. With certain exceptions, the effect of differential intelligence upon the total pattern of personality is quite sharp. Exceptions are: the degree of artificiality of outer emotional control, the presence or absence of over-control, and some of the more obvious signs of anxiety such as excessive preoccupation with the shading elements of the cards.

It seems possible to suggest certain interesting generalizations from the results summarized in Table VII, as follows:

(1) The superior group shows a much greater general responsiveness to color stimulation and much more efficient balance within this field than the other two groups.

(2) The superior group also shows to advantage in regard to "inner control." Over half of the average and inferior groups show distinct poverty of inner resources

TABLE VII—Analysis of Significant Elements of General Personality Structure

Criteria of Klopfer and Kelley	Percent of each AGCT group falling within category		
	A Group	*B Group*	*C Group*
I. *Control*			
A. *Outer Control*			
1. Lack of responsiveness: no color responses	12	39	33
2. Emotional lability: CF plus C greater than FC	13	26	30
3. Artificial control: color responses tend to the F/C	22	11	17
4. Over-control: shading responses outnumber color by more than 2:1	13	13	7
5. Insufficient affective energy: M more than twice sum C, F% over 50	3	11	10
6. Under control: Sum C more than twice M, M under 3, F% less than 30	3	11	20
7. Ideal outer control: FC outnumbers sum of CF and C: color not outnumbered by shading by more than 2:1	44	11	17
B. *Inner Control*			
1. Poverty in inner resources: no M	28	53	57
2. Constrictive control: F% over 50	19	45	47
3. Modified constriction: F% slightly over 50 but total percent of F plus FK plus Fc about 70	9	4	7
4. Refined control: F% less than 50; F plus FK plus Fc less than 75%	71	50	47
II. *Adjustment and Security*			
A. *Signs of insecurity and anxiety*			
1. Diffusion responses: presence of at least 3k or k	3	0	0
2. Achromatic responses			
a. if outnumber color by more than 2:1	13	13	7
b. tendency to C'	6	0	0
3. Evasiveness: expressed in tendencies toward anatomical, X-ray or map, or other noncommittal contents	17	32	37
B. *Color and shading "shock"*			
1. Color shock	25	50	40
2. Shading shock	12	16	27

and almost the same number display constrictive control; only a quarter of the superior group appears to be so poor in inner resources as not to produce any M, and only a fifth show constriction.

(3) The superior group again shows to advantage with respect to signs of adjustment and security, although indications of overt anxiety are missing in all three groups.

The analysis of the relational aspects of the data continues with consideration of the "emotional aspects" of the personality. Table VIII gives a description of the categories selected for analysis and shows the effect of intelligence level upon the frequency of appearance of the given categories within our sample.

The data summarized in Table VIII again shows the trend reported above. It is noted here, too, that the superior group shows to advantage on most of the items. Again, all groups produce less M than anticipated. Even the superior group does not come off too well within the sphere of emotional relationships; only half of Group A can be considered to respond well to both inner promptings and outer reality, and Groups B and C show even worse configurations.

Bringing together the major results of this "relational" analysis,

TABLE VIII—Analysis of Emotional Aspects of Personality

Criteria of Klopfer and Kelley	Percent of each AGCT group falling within category		
	Group A	*Group B*	*Group C*
I. *Emotional Reactions to Inner Promptings*			
1. Inadequate inner life: M lower than expectation from intelligence level	53	53	57
2. Hollow quality-ambition: W more than twice M	63	84	93
3. Emotional infantilism: FM significantly greater than M	50	48	63
4. Inner conflict: m reaches or outnumbers either M or FM	9	11	17
5. Healthy balance: sum FM plus m not greater than ½ times M	50	37	33
II. *Emotional Ties with Outer Reality*			
1. Inadequate responsiveness: no color responses	12	39	33
2. Healthy responsiveness: good FC%	50	26	17
3. Impulsiveness and instability: lack of FC but presence of CF	9	30	27
4. Texture as a shock-absorber: ambiequality in Erlebnistyp; modified constriction; predominance of shading over color	0	0	10
5. Texture as further outlet for responsiveness: extraversion; CF greater than FC; color predominant over shading	19	5	13

it is found that:

(1) As in the quantitative analysis, the intelligence factor appears to split the group into two parts; the superior Group A on the one hand, and Groups B and C together, on the other hand.

(2) The individuals of superior intelligence display more efficient inner and outer emotional control, better adjustment, and healthier reactions to both inner and outer stimulation. Although the performance of Group A was superior to that of the other groups, the performance of a large number of the individuals making up Group A fell below standards proposed to indicate well-balanced adjustment.

(3) A few relationships are relatively free from influence by the factor of intelligence; the most important of these are the signs of emotional immaturity, the qualifying use of texture, the more obvious indicators of anxiety, and certain special defects of control.

(4) A very small number of individuals in the series approximated the ideal of the well-balanced personality, according to the standards suggested by Klopfer and Kelley.

(5) The subjects, in general, appear to have developed their adjustment to outer reality better than their inner creativity and flexibility.

DISCUSSION

Although the study has been presented largely from the aspect of analyzing the effect of intelligence level upon Rorschach responses and configurations, it is apparent that the group as a whole falls far short of the standards for normals usually accepted in the Rorschach literature. It would appear that the so-called normal standards really refer to persons of superior intelligence and productivity. This is emphasized by the fact that persons of average intelligence in this study, i.e., the group with AGCT ratings between 90 and 109, cannot be differentiated clearly from the group with inferior intelligence. Even the group with superior intelligence falls somewhat

short of the expectation for normals in matters of productivity and the utilization of a wide range of determinants.

The obvious interpretation is that the customary standards do not apply to the general run of the population. Careful restandardization is necessary if the Rorschach is to be utilized on a broad scale and more particularly if it is to be used in a statistical fashion for research on groups. The finding that only the superior group begins to meet the usual standards has further significance. It raises the question as to whether persons with average or inferior intelligence are sufficiently productive and imaginative to yield Rorschach patterns sufficient to furnish satisfactory personality diagnoses on a formal basis. In a word, is the Rorschach test itself too difficult and too demanding for persons of average or below average intelligence? Is the test method, as at present defined, suitable only for relatively superior individuals?

There are reasons which lead one to question whether the results obtained are typical of the general male population. They are as follows:

(1) The tests were performed in an army setting, somewhat on a command basis. The writers believe, however, that the "command" nature of the performance can probably be disregarded, as most of the subjects were quite willing to cooperate with the research studies being conducted. There may, however, be something in the military setting which caused the subjects to be evasive and unproductive.

(2) The tests were conducted in the South Pacific upon a group who were separated from their normal environment, many of whom tended to be apathetic because of this forced sojourn. The group, however, was divided into halves, and it is believed that if this were a major factor some differences would have been shown between the men who had been overseas for two years and those who had been in the Pacific for less than three months.

(3) The subjects were all enlisted men, and it is possible that subjects with greater initiative and ability had been removed to some extent by officer selection. It is to be remembered, however, that the group as a whole was above average as compared to the general population in educational and career achievement, and the proportion from the rural population was rather small.

(4) The tests were given rather rigidly according to the directions of Klopfer and Kelley, without efforts to stimulate responsiveness when the subject was relatively unproductive. The adherence to a set routine was obviously necessary for statistical purposes. Since slight changes in directions in order to stimulate responsiveness might be a major factor, a control study of 50 cases was made with slightly altered directions, with clearcut increase in productivity; the results will be published in a subsequent paper.

Although it is considered possible, and even likely, that a study of civilian subjects might produce different results, it would seem necessary to prove or disprove this assumption by experiment. Until then, a serious question must remain concerning the validity of the standards usually accepted when dealing with persons of average or below average intelligence.

SUMMARY

The Rorschach test was administered to 100 soldiers selected to reproduce approximately the distribution of intelligence in the wartime army population. Three sub-groups were established according to intelligence level, which were compared statistically to one another, to various standards proposed by Klopfer and Kelley, and to the system of diagnostic signs proposed by Harrower - Erickson and by Ross and Ross. It was found that intelligence level had a greater effect upon the range of responses and their configuration than was anticipated. Further, the intelligence factor caused a marked cleavage into two contrasting groups, rather than producing a gradual transition through the range of intelligence. This suggests that an intelligence level somewhat above average is requisite for adequate rounded performance on the test. Only the group with superior intelligence approximated standards usually considered adequate for "normal" individuals. The groups with average and inferior intelligence yielded patterns very similar to one another and which would be considered "neurotic" according to both the Harrower-Erickson and the Ross and Ross systems of diagnostic signs. In the study of the "relational" aspects of the responses, it was found that very few subjects, including but 19% of the superior group, yielded patterns which approximated "ideal" balance. The specific variation in each category of response and in the various configurational aspects are analyzed and discussed. The study appears to indicate that the influence of intelligence upon the Rorschach needs to be re-evaluated; that modifications be made in interpretation in accord with the limitations imposed by intelligence; and that the test needs modification or the technique of administration needs alteration to increase the range of its usefulness with persons of less than superior intelligence. In addition, there seemed to be clear indications that if the test is to be used in statistical fashion in group research, a thoroughgoing restandardization of the test is essential.

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Developmental Aspects of Personality Structure in Normal Children[1]

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The purpose of this paper is to summarize the Rorschach test findings and their psychological significance in a cross-sectional study of developmental aspects of personality structure in normal children. This report covers one aspect of a current research program at Michael Reese Hospital dealing with the problem of schizophrenia in both children and in adults.

In order to comprehend the nature of the schizophrenic process as revealed through the Rorschach test, it is necessary to establish a norm for the assessment of deviants. Apart from its purpose in serving as a basis for comparison with schizophrenic children, knowledge of normal development gained through this investigation has intrinsic value. Standards are essential if one is to comprehend adequately the dynamic play of psychological forces for any particular child. One must know what constitutes the normal range when a child is compared with other children in his group. In addition, it is important to establish scoring criteria for younger age groups as well as for adults. Hertz's comments in this regard are pertinent:

> "It is obvious that what is normal or abnormal for the adult, is not normal or abnormal for the child. Thus one cannot find 'abnormal' indications in the records of children, until one has a standard of normality for the group of like age. It is not known, for example, how many normal details, accurately seen forms, or popular forms, fall within a range of normality for children of specific age ranges. Until such norms are available, results cannot be characterized as typical or atypical for any one child." (3, p. 154)

There are many important questions to which we may address ourselves in observing the process of development. What changes occur from one growth period to another? How extensive are these changes? Which characteristics appear to be the most stable throughout development? What are the primary characteristics of a given age level which tend to differentiate the group at this level from those at preceding, or following, chronological periods? The increasing development of the Rorschach test as a precise scientific instrument affords an opportunity to answer these and other questions. It enables us to examine the normal ego in its development from middle childhood through adolescence.

The present paper will be oriented about those aspects of normal intellectual activity, affective reactions, fantasy activity, and a variety of other personality characteristics of children that are revealed by the Rorschach test. All the records included in this study

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were scored according to the latest procedures published by Beck (1). An inspection of each of the Rorschach signs for the age groups studied will precede an overall synthesis of the data into a meaningful pattern which may be considered as characteristic for the members of the normal group as a whole. Such characteristics as are disclosed by analysis of the data are assumed to be those which represent the processes in the developing personality structure of normal children.

PROCEDURE

The subjects of the study consist of 155 children selected from the Chicago Public Schools on the basis of normal intelligence, freedom from overt behavior problems discernible by their teachers, and an average academic achievement. Since intelligence ratings were based on different intelligence tests given in the Public Schools, the mean intelligence quotient of the group is not reported. All the intelligence ratings were within normal range and were obtained from either the Kuhlman-Anderson, Otis Self-Administering, or the Henmon Nelson tests of intelligence.

The total group of children consists of seventy-two girls and eighty-three boys. The mean chronological age for the group is 10 9/12 years, with a standard deviation of 3 2/12 years. Age range for the group extends from 6 years to 17½ years. Table I presents the descriptive data for each of the age groups studied.

Age breakdowns for the total group were made at three levels: (a) six through nine; (b) ten through thirteen; and (c) fourteen through seventeen. The rationale for this age breakdown is based on three important periods of growth in childhood. These periods were chosen as representing major developmental stages of growth in the child as defined in psychological thinking. It is apparent that any age grouping for the purpose of analysis of developmental processes must be somewhat arbitrary. Ideally, information should be available concerning the growth curves and other indices of physiological development for each subject studied. On the basis of such information, it then would be possible to classify accurately each child with reference to the stage of pubescence and prepubescence reached. Since such information was not available for this study, the entire children's group was broken down into the three periods of middle childhood, prepubescence and adolescence. Despite the inevitable overlap between groups, such classification of developmental periods was considered a feasible one. Thus, it is possible to trace the development of the personality structure beginning with the latency period and extending through prepubescence and adolescence.

TABLE I—Age Breakdown of the Children

	Total N	N Boys	N Girls	Mean C. A. M Yrs. & Mos.	SD
6- 9 yrs., 11 mos.	69	38	31	7 yrs., 9 mos.	1 yr., 3 mos.
10-13 yrs., 11 mos.	62	31	31	11 yrs., 11 mos.	1 yr., 7 mos.
14-17 yrs., 11 mos.	24	14	10	15 yrs., 8 mos.	1 yr., 3 mos.
Totals	155	83	72	10 yrs., 9 mos.	3 yrs., 2 mos.

Statistical comparisons were made in terms of the varying significance of differences between the age ranges on all the major Rorschach test variables.

The number of Rorschach variables which are normally distributed is limited. In fact, only R, Z, F plus per cent, P, and A per cent follow a normal curve. A statistical technique which is not dependent upon a normal distribution is the Chi-Square method of analysis. Because of its applicability to this investigation, the Chi-Square technique was utilized for the analysis of all the Rorschach test variables. Chi-Square levels of significance between the age groupings are given in Table XXI.

The analysis of the data followed the standard form of determining, first, whether it was possible to differentiate significantly between all three age groups before continuing with a further analysis. In those instances where significant Chi-Squares were obtained, indicating that a real difference did exist among the three groups when considered in their relationships to one another, we proceeded to determine the level of significance for each group when compared to the other two age groups. Thus, for each variable, where an initial significance was demonstrated, three additional Chi-Square values were obtained.

Results

Throughout the following discussion of the findings, the statistics as such will be presented only for the children's group as a whole. However, the discussion will be concerned primarily with the implications of these data for the relationships among the three age groups. Reference to tables for a presentation of the exact statistical findings for each of the age groups will be indicated throughout the discussion.

I. *The Intellectual Sphere*

Within the intellectual sphere, there is a progressive increase in some of the various Rorschach test components throughout the three age ranges. Those variables which are statistically significant include productivity, R; the popular response, P; and fluctuation in productivity. The concept of mental energy is one consistent with thinking in the biological and psychological sciences generally. It has been emphasized especially in the psychoanalytic literature. Thus Weiss (5) stresses that the energy derived from somatogenic drives is displaced and invested in mental processes. Freud originally referred to this phenomenon in his discussion on "cathexes." The particular direction of this rechannelized energy, which may be conceived of as both quantitative and qualitative in nature, will vary depending upon its source and the needs of the organism as a whole at any given time. As these needs undergo certain alterations during the various stages of development, it is to be anticipated that their psychological concomitants will be tapped by the Rorschach test.

A. *Productivity* (R). The quantity of intellectual energy at the disposal of the individuals studied increases with age. This may be regarded as a manifestation of the increasing investment of energy in intellectual functioning. The mean productivity for the children's group as a whole is 27.15 responses with a standard deviation of 14.05. The three age sub groups are significantly differentiated, one from

another, on the basis of a continuous increase in the number of responses from the lowest to the highest age levels.

Table V indicates mean productivity for the children's group as a whole as well as for the age breakdown. The statistics for mean productivity for each of the ten test figures are shown in Table II. A

TABLE II—Mean Productivity for Each of the Ten Test Figures

	Total Group		Age 6-9		Age 10-13		Age 14-17	
Card	Mean	SD	Mean	SD	Mean	SD	Mean	SD
I	2.71	1.93	2.35	1.48	2.67	1.93	3.25	1.01
II	2.61	1.51	2.28	1.45	2.56	1.44	3.67	1.40
III	3.07	1.62	2.67	1.32	2.94	1.51	4.62	1.71
IV	2.31	1.60	1.83	1.20	2.32	1.52	3.66	1.77
V	2.12	1.41	1.74	1.00	2.08	1.45	3.29	1.65
VI	2.13	1.48	1.72	1.16	2.13	1.51	3.54	1.85
VII	2.40	1.53	1.93	0.98	2.38	1.57	3.79	1.83
VIII	2.91	1.70	2.36	1.18	3.06	1.88	4.50	2.11
IX	2.38	1.77	1.81	1.35	2.44	1.71	3.83	2.27
X	4.25	2.21	3.10	1.99	4.20	2.98	9.41	1.74

frame of reference is thus established for the expectancy at each of the developmental periods. With increase in age, there is a concomitant increase in the number of responses for each of the ten figures. Thus, not only does total productivity increase progressively with age, but also the productivity for each of the ten test stimuli shows a consistent increment.

B. *Organizational Energy, Intellectual Drive* (Z). The Z score has been advanced by Beck as an index to the organizational aspects of intellectual functioning as revealed by the Rorschach test. Beck has postulated that drive and intellectual level are the two personality components most closely related to this ability. The mean Z score for the entire children's group is 11.05 with a standard deviation of 14.45. An examination of the age breakdown reveals a progressive increase in organizational ability as revealed by mean Z scores with an increase in age. Along with the increase in intellectual energy which has been noted above, there is a corresponding increase in the ability to organize these relationships. However, this increase is significant only for a comparison between the oldest age group and each of the two younger groups. Table III shows the findings.

TABLE III—Organizing Activity Z Score Total

Group	*N*	*Mean*	*SD*	*Median*
Combined age groups	155	11.05	14.45	6.10
Age 6- 9	69	7.15	7.40	4.88
Age 10-13	62	8.45	10.10	5.61
Age 14-17	24	28.90	23.00	24.50

The increase in Z which accompanies the increase in productivity is to be anticipated in a group of children of normal intelligence. With the release of mental energy, we would expect a concomitant increase in the ability to organize these relationships, if there is no interference with the level of functioning intelligence. An examination of mental growth curves reveals that the adolescent period is one characterized by a mental growth spurt which begins to reach its peak toward the end of this period. Our findings may be in-

terpreted in the light of this phenomenon as emphasizing the release of mental energy which accompanies the maximum fulfillment of intellectual capacity during adolescence.

C. *Construction of Reality (F plus per cent).* The F plus per cent indicates the extent to which an individual is capable of structuring his world along the lines of reality; it provides us with an index to his degree of perceptual accuracy and ego control. The group mean F plus per cent is 70.05 with a standard deviation of 11.15. The findings are shown in Table IV.

TABLE IV—F Plus Percent

Group	*N*	*Mean*	*SD*	*Median*
Combined age groups	155	70.05	11.15	68.89
Age 6- 9	69	67.17	11.90	65.93
Age 10-13	62	73.69	12.40	73.78
Age 14-17	24	70.95	9.20	71.50

An analysis of the ability of the children to perceive accurately the formal aspects of their world at each of the age levels reveals that the middle age group is significantly differentiated by its higher mean F plus per cent from the youngest group. There is thus apparent a significant gain in ego control for the middle age group as contrasted with the youngest group, an increase in ego control which does not extend beyond the middle years. The exact point of differentiation in ego control cannot, of course, be determined precisely from the present age groupings. However, it is apparent that this change does occur within the years from ten to thirteen. The youngest and oldest age groups do not differentiate in this respect. It, therefore, may be inferred from these data that the higher F plus per cent in the middle age group indicates a trend toward constriction for this group. In the light of later discussion of the prepubescent period, this isolated finding assumes greater interpretative significance.

D. *Intellectual Approach.* The method by which each member of this normal group approaches his world and resolves it into its component parts tends to remain constant throughout the various stages of his development. Table V shows the mean numbers of W, D, and Dd and also their translation into percentages.

1. W per cent. The perception of whole responses involves concept formation, the ability to form abstract relationships. The group as a whole has a mean W per cent of 12.55 with a S.D. of 11.60. A consideration of age breakdowns at each of the three levels shows that there are no differences for any of the intergroup comparisons.

An additional factor of considerable importance is the confabulatory type of W response, the best

TABLE V—Productivity and Distribution of Approach Variables in Normal Children

	Total Group			Age 6-9			Age 10-13			Age 14-17		
	Mean	SD	Mdn.	Mean	SD	Mdn.	Mean	SD	Mdn.	Mean	SD	Mdn.
R	27.15	14.05	23.20	21.93	9.20	18.77	27.40	14.35	23.50	41.35	15.00	41.17
W%	12.55	11.60	9.10	13.00	12.40	9.30	15.30	18.90	9.23	12.83	9.40	10.75
D%	74.25	14.20	75.46	75.83	12.20	77.00	72.30	17.10	74.50	74.50	8.25	75.33
Dd%	13.55	10.45	11.50	13.10	10.45	11.50	10.85	12.00	13.25	13.25	9.40	9.50
W	3.14	3.28	2.26	2.64	2.64	1.77	2.77	3.01	2.03	5.08	3.83	3.50
D	20.00	10.65	18.38	16.21	7.47	15.25	19.90	11.05	17.44	30.34	10.75	29.50
Dd	4.46	4.54	2.56	3.00	3.52	2.37	4.81	0.59	2.43	5.76	5.32	4.50

example of which is the traditional DW. This manifestation of an a-logical intellectual approach is, as might be expected, almost completely alien to the normal children in this study. Only two DW responses are observed for the entire population of 155 children (4208 responses).

2. D per cent. The D response is an index to the degree of importance which one places upon the most practical aspects of daily living. At its highest extremes it can indicate constrictive processes within the personality structure that may be due to a psychological deficit arising from either a constitutional deficiency in intelligence or a functional deficiency related to anxiety. The mean D per cent for the group is 74.25 with a standard deviation of 14.20. No differences are observed between the three groups for this variable.

3. Dd per cent. The importance which an individual places upon the minute, rare details of the blots is reflected by the Dd per cent. A Dd per cent of 13.55 is characteristic for the group as a whole; S.D. is 10.45. Here again the three groups are not differentiated on the basis of this variable. As has been noted, the emphasis upon the abstract or concrete in the thinking of the normal child does not vary throughout the age groupings. However, these findings are not based upon a consideration of the qualitative aspects of the child's conceptual thinking. The W's presented by very young children, ages six through nine, generally do not require the same skill in ability to form abstract relationships that is true of older children, ages fourteen through seventeen. The syncretistic type of perception noted by Piaget in his observations of young children, is one wherein uncritical attention is paid to the whole with little awareness of the component parts. Although it is recognized that this is an important problem for experimental verification, the statistical comparisons employed in the present study have not been designed to test this.

4. Normal approach expectancy. The normal approach expectancy for a group of 157 normal adults has been established (2). The mean number of responses reported for this group is 32. The approach expectancies are: 6 W, 23 D, 3 Dd.

The total group of children in the present study give a mean number of 27.15 responses. Approach expectancy is 3 W, 20 D, and 4 Dd. If we compare this with the data obtained in Beck's normal adult group, the proportion of W, D, and Dd is approximately the same. Table VI compares the approach expectancies in the children's group, calculated on the basis of both adult and children standards.

TABLE VI—Approach Expectancy Values Based on Child and Adult Standards

	Child Standards			Adult Standards		
	W	D	Dd	W	D	Dd
Total Group	3	20	4	5	19	3
Age 6- 9	3	16	3	4	15	3
Age 10-13	4	20	3	5	19	3
Age 14-17	5	31	5	8	29	4

The approach expectancies based on children standards are derived from the mean number of R, W, D, and Dd for each age group as reported in Table V. The one notable difference in approach expectancy when both standards are used occurs in the adolescent group. This group has a mean number

of 41.35 responses. They are more productive than Beck's group of normal adults who give a mean number of 32.65 responses. According to adult standards, 8 W, 29 D, and 4 Dd are expected for 41 responses. Using the standards based on the data obtained from the 14-17 year old age group, 5 W, 31 D, and 5 Dd are expected. This discrepancy in the number of W and D is due to the fact that the adolescent group emphasizes D at the expense of W. In Beck's group of adults, the W per cent and D per cent are 19.81 and 71.94 respectively. In the 14-17 age group, the percentages are 12.83 for W, and 74.50 for D. With the increase in productivity in the adolescent group, W does not increase proportionately. These findings would suggest that the intellectual process involved in W is a difficult one, and one that is not completely attained until full maturity is reached. It also may be indicative of the effect of adolescent stresses in interfering with the production of W.

5. Sequence. Sequence in each age group was studied by the inspection technique described by Beck (1). The types of sequence judged were methodical, irregular, and confused. Borderline judgments, such as methodical-irregular and irregular-confused, were also included.

Table VII shows the distribution of these various types of sequence in each of the three age groups. Highly irregular and confused sequence types do not occur in this sample of normal children. Irregular sequence occurs most frequently in the adolescent groups. Chi square between the 6-9 and 14-17 groups was significant at the .05 level; between the 10-13 and 14-17 year groups at the .02 level. The two younger groups, however, do not differ in this respect.

The adolescent group in comparison with the youngest age group has a significantly fewer number of cases in which the sequence could not be judged because of insufficient variation in W, D, and Dd (Not Enough Variation). Chi square between the 6-9 and 14-17 year groups was significant beyond the .001 level. However, no significant difference is obtained between adolescents and prepubescents, although the trend is toward fewer cases in the adolescents.

TABLE VII—Sequence Types

	Age 6-9 N=69		Age 10-13 N=62		Age 14-17 N=24	
	N	%	N	%	N	%
Methodical	2	2.9	3	4.6	1	4.1
Methodical–irregular trend	19	27.5	27	43.5	14	58.3
Total	21	30.4	30	48.1	15	62.4
Irregular	4	5.8	4	6.4	6	25.0
Highly Irregular	0	0.0	0	0.0	0	0.0
Irregular–confused trend	0	0.0	0	0.0	0	0.0
Total	4	5.8	4	6.4	6	25.0
Confused	0	0	0	0	0	0
Not Enough Variation	27	39.1	17	27.4	2	8.3
R too low	17	24.6	11	17.7	1	4.1
Total	44	63.7	28	45.1	3	12.4

These findings are consistent with the general findings of this study which emphasize freedom of mental energy as a concomitant function of the release of intellectual capacity during adolescence. The rigidity which appears in sequence of thought in the two younger age ranges disappears during adolescence. With the maximum release of intellectual capacity during adolescence there is more flexibility in the manner in which this intelligence is applied in meeting the demands of the environment.

E. *Animal Content.* The animal response, A, was described by Rorschach as indicating the opposite of mental liberation and flexibility. Within the normal range it may indicate a healthy degree of adaptability. In its extreme form it reflects stereotypy of thought processes. The mean A per cent for the entire group of children is 47.95 with a standard deviation of 16.35, as indicated in Table VIII. No significant age group differences are disclosed by the Chi-Square method of analysis. However, the mean A per cent for the middle age group is higher than for the other two age ranges. Here again we see a recurrence of the trend toward constriction in the prepubescent period, as has been noted previously.

TABLE VIII—Animal Percents

Group	*N*	*Mean*	*SD*	*Median*
Combined Age Groups	155	47.95	16.35	46.23
Age 6- 9	69	45.86	16.50	44.10
Age 10-13	62	51.68	16.35	48.25
Age 14-17	24	48.85	14.00	44.50

F. *Human Content.* Table IX indicates the frequency distribution of H and Hd. The mean number of Hd is greater than the mean number of H for each of the age groups. This finding is directly contrary to that reported by Beck, Rabin, Thiesen, Molish, and Thetford in their paper on 157 normal adults (2). They concluded that: "Since the mean H is so noticeably higher than mean Hd, the inference would be for a relatively uninhibited state of mind, a relaxed attitude."

The question must be raised as to the applicability of the findings for normal adults in supplying a frame of reference for normal children. Does the greater number of Hd responses characteristic for the

TABLE IX—Frequencies of H and Hd

No. of H or Hd	H Number of S's				Hd Number of S's			
Frequency	Total Group	Age 6-9	Age 10-13	Age 14-17	Total Group	Age 6-9	Age 10-13	Age 14-17
20-21					1		1	
18-19								
16-17					2	1		1
14-15					1		1	
12-13					4	2	1	1
10-11	1			1	1			1
8-9	6	1	2	3	7	2	4	1
6-7	7	1	4	2	12	5	6	1
4-5	20	11	5	4	14	4	6	4
2-3	36	15	15	6	39	14	15	10
0-1	85	41	36	8	74	41	28	5
N	155	69	62	24	155	69	62	24
Mean	2.03	1.68	1.86	3.50	3.74	2.30	3.16	4.16
SD	2.27	1.75	2.19	3.06	3.62	3.51	3.87	3.98
Median	1.30	1.18	1.14	2.83	1.86	1.06	1.80	2.90

children at each developmental stage reflect the operation of inhibitory processes? Or are such findings to be anticipated as part of normal development in children? Confirmation from additional evidence is necessary before we can view the present findings as unequivocal. Developmentally, we do observe a progressive increase in the mean quantity of both H and Hd at each of the age levels. However, significant differences obtain only for the H variable between the adolescents and prepubescents and between the adolescents and the youngest age group. That is, the age groups are differentiated one from another with the exception of the two youngest groups. For Hd, no significant differences are revealed by age breakdown comparisons.

Since it is known from Rorschach test experience that the number of H responses varies directly with intelligence, the greater mean quantity for the adolescent group may be viewed as an additional confirmation of the intellectual liberation which has been noted for this period. Along with the higher productivity and greater organizational ability, this evidence substantiates the picture of the adolescent group as one characterized by increased intellectual capacity. Developmentally, the progressive increase in H may also be considered as representing the striving for increased contact with one's fellow man. It reflects the increase in socialization which accompanies advance in age.

G. *The Popular Response.* The Rorschach popular response affords an index of the extent to which an individual is intellectually conforming to the thinking of his group. For this variable a mean of 4.54 with a standard deviation of 2.38 characterizes the entire normal children's group. The statistics for popular responses are shown in Table X. There is a progressive increase with age in the number of popular responses. This continuous increase in the ability to engage in communal thinking is significant for all inter-group comparisons. As the child internalizes more of his social milieu, he comes increasingly to share the thinking of those about him. The popular response provides an effective index of the degree of socialization achieved by the developing child. It reflects the use to which the concurrently developing intellectual capacities are put, in the observance of social canons.

TABLE X—Popular Responses

Group	*N*	*Mean*	*SD*	*Median*
Combined Age Groups	155	4.54	2.38	4.52
Age 6- 9	69	3.19	1.74	2.93
Age 10-13	62	5.23	2.33	5.14
Age 14-17	24	6.75	1.64	6.50

H. *Fluctuation in Productivity and Initial Response Time.* The emphasis in scientific research has recently been in the direction of considering not only the mean level of any particular activity, but also the variation which may be observed for this level over a period of successive stimulation. Such variation may be observed in performance on the Rorschach test in the mean fluctuation in productivity. Fluctuations were obtained by taking the differences in productivity from one card to the next; and then computing the mean of the sums of these differences. The mean number of fluctuations for each of the groups is shown in Table XI. This variable significantly differentiates between

TABLE XI—Mean Fluctuation in Productivity

	Mean Number Fluctuations	*SD*	*Median*
Total Group	1.16	1.55	1.12
Age 6- 9	0.92	0.38	0.78
Age 10-13	1.21	0.54	1.21
Age 14-17	1.67	0.60	1.60

all age groups, the oldest group showing the greatest amount of fluctuation. This finding might not have been anticipated in view of previous studies which refer to unevenness of intellectual functioning as a pathological process.

Another measure of variation in responsiveness is the mean fluctuation in initial response time. This was computed in a manner similar to that which has been described above for productivity. The group mean for this variable is 25.85 with a standard deviation of 15.90. The distribution throughout the normal sample for mean fluctuation in initial response time is indicated in Table XII. The oldest age group is less variable or more stabilized in their reactions to environmental stimuli, as measured by fluctuation in initial response time. The greater variability for the younger groups may be a result of a higher incidence of color and shading shock among their members, a possibility this study has not yet evaluated. It also may be regarded as reflecting the generally less stable characteristics of the psychological processes for this period.

I. *The Lambda Index.* The lambda index has been developed for the purpose of identifying the ratio of all unmixed F responses to all other responses. That is, this ratio combines all form elements regardless of whether they are plus, minus, or simply scored as F, in comparison to the total productivity for each record. On the one hand, an excessively large ratio would indicate domination by the strong ego forces over inner living. The group mean for the lambda

TABLE XII—Mean Fluctuation in Initial Response Time

Range of Mean Fluctuations, in Seconds	*Total Group No. of S's*	*Age 6-9 No. of S's*	*Age 10-13 No. of S's*	*Age 14-17 No. of S's*
90-94			1	
85-89			0	
80-84			0	
75-79			0	
70-74	1		0	
65-69	1	1	1	
60-64	5	1	0	1
55-59	2	2	3	0
50-54	1	0	0	0
45-49	4	2	1	0
40-44	6	2	2	0
35-39	10	4	4	0
30-34	12	7	6	0
25-29	16	7	5	3
20-24	16	5	6	3
15-19	11	5	8	1
10-14	15	6	5	4
5-9	11	2	5	8
0-4	7	3	1	4
Mean	25.85	27.00	32.11	14.10
SD	15.90	15.35	17.45	12.90
Median	24.20	26.28	28.66	9.50

index is 79.80 with a standard deviation of 13.15. The findings are indicated in Table XIII. No significance differences are observed between the two youngest groups.

TABLE XIII—Lambda Index

Group	*N*	*Mean*	*SD*	*Median*
Combined Age Groups	155	79.80	13.15	80.75
Age 6- 9	69	78.40	12.25	79.68
Age 10-13	62	83.35	12.15	83.25
Age 14-17	24	64.50	15.40	67.00

However, the oldest group is differentiated by its lower ratio from both the youngest group and the middle age group.

A consideration of the lambda index suggests that constriction increases to a peak at some time between ages ten to thirteen. After that, the increasing R, Z, and M, as well as the lower lambda index, all indicate that in the adolescent period there is the beginning of a general enrichment of personality potential. There is a dissolution of the constrictive trends noted in the prepubescent period, reflecting the diminution of defense mechanisms as the adolescent attempts to cope with his emotional problems.

II. *The Affective Sphere.*

The analysis of our data pertaining to affective responses reveals an interesting trend. From the youngest group to the middle group, there is a decrease in impulsive and labile expression. This contributes to the increased constriction noted earlier for the middle childhood years. It may be suggested that the decline in this aspect of affective responsiveness reflects a period of investment of energy in the preadolescent growth spurt. As the growth process steadies and the children enter adolescence, their new status makes possible a stronger expression of affectivity. This is apparently reflected in our oldest group by their exhibiting a greater mean quantity for all but one of the color variables in comparison to the earlier years. The color variable for which the oldest group does not show a quantitative increase is the pure color response. This response is regarded as the least controlled, and hence developmentally the most primitive of all the affective components.

While the trend we have noted is an important one, on only two of the color variables is it possible to differentiate significantly between the groups. These two variables are the summation of color responses and the color-form response. The summation of all the color responses for a subject provides us with an index to the amount of affective energy which he has available for externalizing in coping with his environment. The range of sum C with the per cent of cases falling at each of the intervals is shown in Table XIV. The total amount of affective energy at the disposal of our normal children is reflected by a group mean of 2.02 with a standard deviation of 2.11. In analyzing the relationships between the age groups, a significant difference obtains between the 14-17 and 10-13 year olds for this component of the personality. The middle group shows a significantly lower sum C score than does the oldest group.

The oldest group, however, displays significantly more affective lability as measured by the color-form response than do either of the younger age ranges. The mean CF for the total group is 0.81 with a standard deviation of 1.31. When the color-form response is considered in relation to the productivity,

TABLE XIV—Summation of Color Responses (Sum C) and Their Distribution in Percentages

Sum C Scores	Total Group Percent	Age 6-9 Percent	Age 10-13 Percent	Age 14-17 Percent
7.0 - and above	4	3	2	16
6.5 - 6.9	2	2	0	8
6.0 - 6.4	1	0	2	0
5.5 - 5.9	3	3	3	0
5.0 - 5.4	1	2	0	0
4.5 - 4.9	2	0	3	4
4.0 - 4.4	2	3	2	0
3.5 - 3.9	4	3	5	4
3.0 - 3.4	5	8	2	4
2.5 - 2.9	6	7	3	8
2.0 - 2.4	9	11	6	8
1.5 - 1.9	8	11	6	0
1.0 - 1.4	14	9	18	17
0.5 - 0.9	15	17	16	8
0	25	20	32	21
N	155	69	62	24
Mean	2.02	1.98	1.62	3.03
SD	2.11	1.80	1.87	3.02
Median	1.30	1.61	1.00	2.20

degree of organization, and amount of fantasy, its importance is enhanced as one of the contributing components to a total personality picture of liberation for this adolescent period. It may be considered as a testimony to the lability produced by the adolescent pressures typical of our culture.

The present findings do not significantly differentiate the three age groups on the basis of form-color (FC) and pure color (C) responses. The FC response is an expression of emotional identification with others and a responsiveness to their needs. The pure C response reflects impulsive affective expression that operates through the channels of ego-gratification. Throughout the various stages of ego growth one would, therefore, expect an increment in the FC responses with a decrement in pure C responses. While the present data indicate a trend in this direction, statistical tests of significance fail to indicate a reliable difference. The mean number of FC responses for the total group is 0.98 with a standard deviation of 1.38. For the pure color responses the mean is 0.35 for the group as a whole, and the standard deviation 0.75. These figures are indicated in Table XV.

The affective ratio refers to the ratio of the sum of productivity in the last three Rorschach cards to the sum of productivity for the first seven cards. This provides us with a measure of the degree of affective release under the influence of color. The group mean for this ratio is established at 0.57 with a standard deviation of 0.21. Table XVI presents the findings. Intergroup comparisons for the age breakdowns reveal a significant difference only between the oldest and the youngest children. The highest ratio for the intergroup comparisons is found during the adolescent years. The oldest group is not differentiated from the middle group. According to the hypothesis previously stated, that the middle years are a period of con-

TABLE XV—Percentage Distribution of Color Variables

	Total Group Percents			Age 6-9 Percents			Age 10-13 Percents			Age 14-17 Percents		
Number of Responses	Pure C	CF	FC	Pure C	CF	FC	Pure C	CF	FC	Pure C	CF	FC
8	0	0	1	0	0	0	0	0	2	0	0	0
7	0	1	1	0	0	0	0	0	2	0	4	4
6	0	2	1	0	1	1	0	0	0	0	8	0
5	1	1	1	0	0	1	2	0	0	0	4	0
4	1	0	2	1	0	1	0	0	2	0	0	4
3	1	5	3	1	7	4	0	2	0	0	8	8
2	5	14	12	6	10	12	2	13	15	8	25	8
1	19	19	35	21	23	41	16	16	32	17	17	25
0	74	59	44	69	58	39	81	69	48	75	33	50
Mean	0.35	0.81	0.98	0.43	0.74	0.99	0.27	0.47	0.92	0.33	1.92	1.13
SD	0.75	1.31	1.38	0.79	1.12	1.18	0.74	0.77	1.46	0.62	2.08	1.67
Median	0.0	0.0	0.66	0.0	0.0	0.77	0.0	0.0	0.55	0.0	1.50	0.50

striction in various psychological processes, this may initially appear to be a discrepant finding. One would anticipate that if the 10-13 year group is one which is generally characterized by the operation of constrictive processes, the affective ratio would also tend to be significantly lower for this group. The present data would indicate that although trends toward constriction are noted in other areas for the prepubescent group, this is not characteristic for the affective ratio. However, the finding of a significantly lower sum C score for this group as compared with the oldest age group indicates a partial trend toward restraint of affect, which is not confirmed by the other color variables.

TABLE XVI—The Affective Ratio

Group	*N*	*Mean*	*SD*	*Median*
Combined Age groups	155	0.57	0.21	0.53
Age 6- 9	69	0.53	0.23	0.49
Age 10-13	62	0.59	0.21	0.55
Age 14-17	24	0.60	0.14	0.59

Light determined responses reflect nuances of the dysphoric mood process occurring within the affective sphere. Table XVII graphically portrays the distribution of these responses, and the percentage of subjects in each of the groups, corresponding to this distribution.

A. *The Vista Response.* The psychological significance of the vista response is defined in terms of the self-appraisal tendencies of the individual. Its exact meaning within the total personality picture depends on other aspects of the whole configuration. Clinically, this response is most generally conceived as an index to feelings of inferiority; and in its extreme degree with dysphoric mood.

All responses which contained a vista element were combined in order to obtain a total index for this component. The mean summation of vista responses for the total children's group is 1.12 with a standard deviation of 1.59. The adolescent group exhibits a significantly greater amount of this self-evaluative component than do the other two groups.

Those responses in which the element of form dominates over the vista component are characterized by a group mean of 1.08 with a standard deviation of 1.58. There is a progressive increase in the amount of FV for each age level. Again, the oldest group is

TABLE XVII—Shading Responses

Responses Number of	Total Group Percents Y	YF	FY	Sum Y	Sum V	FV	Age 6-9 Percents Y	YF	FY	Sum Y	Sum V	FV
10				1								
9												
8												
7			1	1	1	1					1	1
6			1	3	1	1					1	1
5			1	1	3	3					3	3
4			1	1	6	6			2	1	4	4
3	1	1	7	9	8	7	2		4	7	3	3
2	1	3	8	11	9	9	3	2	6	12	6	4
1	12	5	20	25	19	16	14	7	25	33	19	19
0	86	91	61	49	53	56	81	91	63	46	62	64
Mean	0.16	0.14	0.81	1.08	1.12	1.08	0.25	0.10	0.55	0.84	0.90	0.87
SD	0.45	0.47	1.32	1.59	1.59	1.58	0.57	0.35	0.89	0.98	1.59	1.59
Median	0	0	0	0	0	0	0	0	0	0.11	0	0

Responses Number of	Age 10-13 Percents Y	YF	FY	Sum Y	Sum V	FV	Age 14-17 Percents Y	YF	FY	Sum Y	Sum V	FV
10										4		
9												
8												
7									4			
6					2	2			8	17		
5			2	2	3	3			4	4	4	4
4					5	3			4	4	16	17
3			3	3	6	6		4	25	21	21	21
2		2	5	11	11	13		13	21	17	13	13
1	8	5	14	17	20	16	13		17	17	16	13
0	92	93	76	66	53	56	87	83	17	17	29	33
Mean	0.08	0.08	0.42	0.58	1.06	1.00	0.13	0.38	2.50	2.92	1.92	1.87
SD	0.26	0.32	0.92	0.99	1.50	1.47	0.33	0.86	1.94	2.46	1.60	1.64
Median	0	0	0	0	0	0	0	0	1.80	2.50	1.83	1.83

significantly differentiated from either of the younger groups on the basis of this variable.

It may be concluded that the self-appraisal tendencies of the individuals studied are manifested to a greater degree for the adolescent children. The ability to introspect healthfully may be considered as an additional facet of normal personality development. If this period is considered as one where personality structure crystallizes, then one additional aspect of maturity is to be noted in the amount of introspection exhibited by this group. These responses can also be interpreted as reflecting the appearance of self-conscious attitudes commonly noted during adolescence.

B. *The Y Response.* The Y response offers us another index to dysphoric forces at work in the personality. It gives us insight into the anergic processes in the individual which in their extreme form may lead to passivity.

The summation of all the responses containing this shading element has a mean of 1.08 with a standard deviation of 1.59. The oldest age group displays a greater sensitivity to the combined Y-de-

termined responses than do either of the younger groups and is significantly differentiated from them on this basis.

The three age groups are not differentiated on the basis of a consideration of the most intense shading responses (pure Y and YF). In relation to the more frequently occurring FY responses, significant differences are observed between the inter-group comparisons for all age groups. For the group as a whole, the mean number of FY responses is 0.81 with a standard deviation of 1.32. The oldest group is differentiated from the other two by a greater number of FY responses. This increase in the number of FY responses throughout the age groupings is not, however, a progressive one, since the middle group is characterized by a smaller mean quantity than is the youngest group.

The increment in the number of responses in which form dominates over shading for the adolescent period is indicative of sensitivity in this group. Whether or not this is a reflection of true dysphoric mood cannot be definitely answered on the basis of our statistical findings. The "bearskin" and "rug" associations, for example, occur in the test with sufficient frequency to minimize their significance as reflections of dysphoria. It is necessary to obtain confirmation of the existence of dysphoria from an examination of each individual record as a whole in terms of its internal consistency. One must consider, therefore, with caution the extent to which psychological significance is attached to this higher frequency of shading responses during the adolescent period.

III. *Fantasy Living.*

A. *The Movement Response.* In the realm of the fantasy life of an individual, the Rorschach movement response provides us with our most important clue as to the nature and meaning of this inner living. Our findings show a progressive increase through each age level in the amount of fantasy living at the disposal of the personality. The group mean is 1.28 with a standard deviation of 1.87. The adolescent produces three times as many M responses as do either of the other two younger groups of children.

Fantasy in children, as revealed by the Rorschach test, makes its appearance at about the age of six, at which time their freedom of movement and instinctual drives are being curbed. Other investigations have shown that at the earlier age levels, fantasy is limited predominantly to percepts involving animal forms. As ego development proceeds with the child's increasing exposure to formal education and to the control exerted by cultural factors in authority, the emergence of a more mature type of fantasy occurs. This is to be anticipated as the normal course of developmental events.

While the present research shows a continuous increase in the amount of fantasy living for the entire age continuum, an additional factor of importance—not reported in this study—is the quality of the movement responses.

The M minus response may be considered as representing a combination of both fantasy activity and perceptual inaccuracy. This is a personal F minus, reflecting the autistic wish. Such a highly individualized percept represents the

autistic fulfillment of the individual's needs. The group mean for this variable is 0.14 with a standard deviation of 0.40. It is of interest that the oldest age group produces a significantly larger number of M minus responses than do either of the two younger groups. Along with the increased liberation of other Rorschach components, as has been previously discussed, the increase in total fantasy production for our oldest age group carries with it the opportunity for the release of a more autistic inner living. With an increase in libidinal energies without opportunity to express them overtly, the adolescent is forced to resort to highly personal fantasy for relief.

The percentage distributions of M and M minus are shown in Table XVIII. The increased incidence of autism for the adolescent raises an important question relating to this critical phase of growth. To what extent may the emotional turmoil which is characteristic for the adolescent in our culture resemble more severe pathology? In particular, this problem is of importance in relation to schizophrenia. The fact that most adolescents exercise the restitutional capacities of their egos and are not subject to later behavioral aberrations complicates this picture. What are the primary differentiating factors which enable one adolescent to integrate his personality while another presenting in many ways a similar personality picture develops schizophrenia? That essential differences do exist is apparent. What these differences actually are is less apparent.

We may conceive of the potentiality for schizophrenia as existing in every personality. It resides on a continuum with varying degrees of susceptibility in each individual instance, depending upon a complexity of factors. It is beyond the scope of this paper to deal with this problem. However, it may be suggested, that there is a point on this continuum at which it is possible to define the probability of a schizophrenic break. To establish criteria for such predictions and to provide quantitative indices which will facilitate the prediction of an outbreak before its overt manifestation constitute major problems for the larger research of which this paper is only a preliminary report.

TABLE XVIII—Percentage Distributions of M and M—

Number of Responses	Total Group Percentages		Age 6-9 Percentages		Age 10-13 Percentages		Age 14-17 Percentages	
	M	M—	M	M—	M	M—	M	M—
7 (or more)	2				2		8	
6	1				0		8	
5	5		4		3		13	
4	5		1		5		8	
3	8		8		5		17	
2	8	2	7		8	3	8	4
1	20	10	20	8	21	8	17	25
0	52	88	60	92	56	90	20	71
Mean	1.28	0.14	0.87	0.07	1.02	0.15	3.04	0.33
SD	1.87	0.40	1.35	1.26	1.54	0.44	2.70	0.56
Median	0	0	0	0	0	0	2.75	0

B. *The Experience Balance.* The reciprocal relationship between movement and color was considered by Rorschach to be one of the the most important aspects of his test. He considered the relative proportion of movement to color to be of greater significance than a separate consideration of each of these factors alone. This ratio between the affectivity and the inner living reveals the degree of emotional stability of the individual.

The experience balance for each record in each of the three age ranges was studied according to Hertz's adaptation of a method utilized by Loosli-Usteri (4). This method describes the experience balance as extratensive, ambiequal, introversive, or constricted, with a consideration of the degree to which each of these characteristics predominate. For the total group, the two predominant types of experience balance are the constricted and extratensive. The rank order of percentage of occurrence is in the following order: constricted, extratensive, introversive, and ambiequal. These figures are given in Table XIX.

A constricted experience balance for the prepubescent period is the predominant finding. All four types of experience balance occur throughout the different age levels. An individual consideration of each of these types of experience balance reveals the following developmental trends.

For the youngest age group, a coarcted experience balance is one of the two characteristic types. An increase in constriction is characteristic for the middle group. During the adolescent period, no one type of experience balance is characteristic. It may be concluded, therefore, that a greater degree of constriction of the personality is a distinguishing characteristic dur-

TABLE XIX—Percentage Distribution of Experience-Balance Types

Type and Degree of Experience-Balance	Age 6-9	Age 10-13	Age 14-17	Percent of Cases in Total Group
Extratensive				
Pure and Very	13.0	4.8	0.0	7.7
Very	2.7	4.8	8.3	4.5
Extratensive	10.1	6.4	25.0	10.9
Pure	14.4	11.3	0.0	10.9
Total Percent	40.2	27.3	33.3	34.0
Ambiequal				
Very	1.4	1.6	4.1	2.0
Ambiequal	5.8	1.6	4.1	3.8
Total Percent	7.2	3.2	8.2	5.8
Constricted				
Very	14.5	22.5	16.6	18.0
Constrictive	26.0	32.2	12.5	26.4
Total Percent	40.5	54.7	29.1	44.4
Introversive				
Pure and Very	1.4	0.0	0.0	6.4
Very	2.7	4.8	12.5	3.3
Introversive	7.2	9.6	16.6	6.2
Total Percent	11.3	14.4	29.1	15.9

ing the preadolescent period. These findings are in agreement with those of Rorschach.

This constriction of both the inner and outer living is a defensive mechanism that is utilized by the preadolescent. As he approaches the emotional problems of adolescence, he copes with his anxieties through a general constraint of personality forces. This may represent a compulsive mechanism of reassurance by which he attempts to effect an adequate adjustment.

In adolescence there is an apparent liberation. This may be considered an additional testimony to those previously discussed characteristics which delineate the adolescent period in our research as one of general liberation of personality potential.

Extratensivity is the second predominant personality component for the youngest age group. Relative to the amount of constriction for the middle period, there is a decrease in the amount of extratensivity noted for this age level. Extratensivity is present during the adolescent years but no more markedly so than either constriction or introversion. However, those adolescents who are extratensive exhibit a lesser degree of extratensivity than do either of the younger groups. This is due to the increased amount of fantasy which the adolescent has at his disposal.

Introversiveness occurs with greater frequency in the adolescents than in the youngest age group—Chi Square significant at the .05 level. However, when the prepubescent group is compared with the adolescent group, the difference in the number of cases in which the experience balance is introversive is not significant. Moreover, the degree in which the introversive component of the personality manifests itself throughout each of the age levels does not differ significantly when the Chi Square test is applied. Our data therefore indicate that with the increased autism in the adolescent period previously noted in our discussion of fantasy living, there is a trend towards greater introversion. However, this increased introversive capacity of the adolescent is accompanied by an increase in outer emotional expression. If this were not true, the degree of introversiveness would be much greater for the adolescent group. Here we see the psychologic play of forces which prepares the adolescent for the crystallization of his personality structure in postadolescent maturity.

The frequency of the ambiequal type of experience balance does not vary throughout the groups. According to Rorschach's conception of personality development, the adolescent period is one characterized by an ambiequal experience balance. The present findings, however, are in disagreement with Rorschach's observations.

IV. *The White Space Response.*

White space responses on the Rorschach test are considered to represent the self-will tendency of the individual. No significant difference is noted in the frequency with which true reversals of figure and ground occur (Ds and Dds) in each of the three age groups. When the total number of responses, which include white space percepts, are considered (Ws, Ds, Dds), significant differences do occur. There is a progressive increase in the total number of these responses throughout the age range although the difference

is significant only when the youngest is compared with the two oldest age groups. That is, the children in middle childhood have significantly fewer white space response than do either the prepubescents or adolescents. See Table XX.

As the normal ego develops, it is characterized by a progressive increase in the amount of self will. In an optimal proportion, this increase results in determination which is an important component of healthy ego structure. Clinically it is known that following the resolution of the oedipal situation, children in the latency period tend toward compliance. Our data would lend support to this observation in that the youngest age group shows the least amount of self will. With prepubescence, this personality component becomes more pronounced and in adolescence it is present to about the same extent as in normal adults.

Table XXI reports the Chi Square levels of significance between the age groupings for all the Rorschach variables discussed.

Summary

The personality of the normal child—ages six through seventeen—in his development may be said to involve the following constellation of factors. Intellectually, he shows a progressive increase throughout his development in the amount of energy which he is able to summon in meeting the demands of his environment. His ability to organize meaningfully the relationships he observes also increases progressively with his chronological development, and manifests itself to a pronounced degree during the adolescent years. These findings may be interpreted in relation to our knowledge of the normal growth curve, emphasizing the freedom of mental energy which accompanies the maximum release of intellectual capacity during adolescence.

Table XX—White Space Responses (S)

Kind of S Response	Total Group			Age 6-9		
	M	SD	Median	M	SD	Median
Sum, S (Including all white space responses)	1.14	1.55	0.60	0.75	1.55	0
Ds (Not in combination with other details)	0.17	0.47	0.0	0.87	0.33	0
Dds (Not in combination with other details)	0.23	0.51	0.0	0.20	0.40	0

Kind of S Response	Age 10-13			Age 14-17		
	M	SD	Median	M	SD	Median
Sum, S (Including all white space responses)	1.19	1.41	0.83	2.08	2.12	1.83
Ds (Not in combination with other details)	0.24	0.58	0	0.21	0.50	0
Dds (Not in combination with other details)	0.29	0.58	0	0.21	0.58	0

His method of approaching his world and resolving it into its component parts tends to remain constant throughout each of the stages of his development. The conformity aspects of his personality increase with each develop-

TABLE XXI—Chi Square Levels of Significance for the Rorschach Variables Between the Age Groupings *

	Age 6-9 vs. 10-13	Age 6-9 vs. 14-17	Age 10-13 vs. 14-17
R	.01	.001	.001
F+%	.02		
Z		.001	.001
H		.02	.02
P	.001	.001	.05
Mean Fluctuation, Productivity	.01	.001	.05
Mean Fluctuation, Initial Response Time		.001	.001
Lambda Index		.05	.01
Sum, C			.02
CF		.02	.01
Affective Ratio		.05	
Sum, V		.001	.02
FV		.001	.02
Sum, Y		.001	.001
FY	.001	.01	.001.
M		.001	.001
M—		.01	.05
Sum, S	.01	.001	

* Levels are reported only where a difference exists at or beyond the .05 level.

mental level. As he matures, he communicates to a greater degree in terms of the popular world of those about him.

The total amount of affective energy at his disposal remains relatively constant throughout his development until adolescence, when it is quantitatively greatest. At adolescence he is more emotionally labile than during the earlier stages of development we have studied. However, our study does not include children in the earliest formative years, that is, before age six, when emotional explosiveness is most characteristic. He is also self-evaluative during adolescence, and accompanying this increased appraisal of himself is a greater sensitivity and awareness.

Throughout his development, he progressively makes greater use of fantasy living as he attempts to cope with his personal needs. His inner living becomes most personalized and autistic during adolescence. With increases in libidinal energy without opportunity to express them, the adolescent is forced to resort to highly personal fantasy for relief.

Characteristically, in regard to many of the psychological processes we have discussed, he tends to appear more constricted during the period immediately preceding adolescence. The question must be raised as to the price which the prepubescent pays for his greater intellectual control and personality constraint. This adaptation required by the process of socialization is achieved, apparently, at the expense of some loss to the expressive aspects of his personality. The decline in affective responsiveness for the prepubescent also may be considered as reflecting a period of investment of energy in the preadolescent growth spurt. With a steadying of the growth process as children enter adolescence, their new status makes possible a more vigorous liberation of affectivity. In coping with his emo-

tional problems, the adolescent displays a liberation and general enrichment of his personality.

Such personality components as have been discussed above delineate a picture of the intellectual, affective, and fantasy processes which characterize the normal child as he progresses from middle childhood through adolescence.

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SUMMARY

A Resume of Some Make-A-Picture-Story (MAPS) Test Results [1]

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The purposes of this paper are to bring together and to synthesize the results of dissertations and published articles using Shneidman's Make - A - Picture - Story (MAPS) projective personality test [3] with different types of subjects. These groups of subjects—which included Normal Adults, Schizophrenic Adults, Aphasic Adults, Suicidal Adults, Hospitalized Neurotic Adults, Hostile Adults, Disturbed Adolescents, and Asthmatic Children—are described in Table I.

For comparative purposes [4] the presentation of the results is divided, for each type of subject, into two sections: (a) the results from the MAPS test *Figure Location Sheet,* which indicates the subject's choice and placement of the test figures on the background pictures—these results are labelled *Picture;* and (b) the results from the subject's verbal responses given to the situation which he created with the figures—these results are called *Story.*

NORMAL ADULTS

Picture

The normal adult on the average uses 3 to 3.5 test figures for each background; he may select the *same* test figure for use on different backgrounds three or more times; he tends to use the following test figures: M-10 (man carrying gifts), M-14 (man with surprised look), M-16 (older man with raised fist), M-19 (man, elbow on hip, arm out, possibly effiminate), M-9 (man with briefcase, possibly doctor), F-9 (older woman, hand on ear), and A-1 (cocker pup).

Story

The normal adult subject frequently chooses test figures to represent specific persons, real or imagined; he also may talk about people in his stories (characters) for whom he has not selected specific test figures. The normal adult story shows a wide range of object choices and is distinguished pri-

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[1] Published with the permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.

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[3] The MAPS test (7) is a modification of the TAT in which the subject selects one or more cut-out figures (from among a total of 67 figures which includes human, mythological and animal figures) and populates background pictures, one at a time, making up a story for each situation he has created.

[4] The only groups whose MAPS test results were compared directly with one another for statistical significance are the Schizophrenic, Normal, and Hospitalized Neurotic Adult groups (1, 6).

TABLE I. Resume of Populations

Type	Description of Subjects	Author
Normal Adults (N-50)	Male World War II veterans, non-psychiatric patients in a V.A. general hospital for various somatic disturbances. Mean age, 25.16 (range 19-41); Henmon-Nelson test mean I.Q., 109.82. Cases of disfiguring, disabling, chronic, recurring or psychosomatic disabilities were not chosen. Other criteria were scores within normal limits on Cornell Selectee Index, Wells-Ruesch Index of Adjustment, and the M.M.P.I.	Shneidman 1948 (6)
Schizophrenic Adults (N-50)	Male World War II veterans, patients in a V.A. neuropsychiatric hospital. Mean age, 27.34 (range 19-42); Wechsler-Bellevue Scale mean I.Q., 104.05. Cases were selected on the basis of certification by four psychiatrists as "Schizophrenic reaction, moderately severe in intensity, duration less than six months." Of the total, 72% were paranoid schizophrenic, 22% mixed, and 6% unclassified schizophrenic.	Shneidman, 1948 (6)
Aphasic Adults (N-33)	Male non-psychotic veterans, in an aphasic ward of a V.A. general hospital. Median age, 35.0 (range, 21-65); mean educational level, 13.06 school years. On the basis of neurological examinations, classified as to cause as 12 traumatic, 6 infectious, and 15 cerebral vascular accident. Mean duration of aphasic disorder, 2.82 years (range 3 months to 10 years).	Shneidman, Nielsen, Schultz 1949 (5)
Suicidal Adults (N-64)	Male veterans, all neuropsychiatric hospital patients of various neurotic and psychotic classifications placed on an observation ward because of either abortive attempt at suicide or threatened suicide. Median age, 36.0; 50% had at least high school education. Ratings by psychiatrists were obtained as to seriousness or non-seriousness of suicidal tendency. (This population of 64 subjects does not include the "control" non-suicidal group of comparable mental hospital subjects in the original study.)	Farberow, 1949 (2)
Hospitalized Neurotic Adults (N-27)	Male veterans, hospitalized in a V.A. neuropsychiatric hospital. Mean age, 38.0 (range, 25-55). Mean educational level 11.3 school years. The psychiatric diagnostic classifications were: 13 reactive depressions (11 suicidal); 11 anxiety reactions (8 suicidal); 2 hysterics (1 suicidal); and 1 obsessive-compulsive.	Conant, 1950 (1)
Hostile Adults (N-20)	World War II veterans (one woman), with various psychiatric diagnoses, in psychotherapy at a V.A. mental hygiene clinic, neuropsychiatric or general hospital. Median age, 31.8 (range 20-54); median educational level, 12.5 school years. All 20 of the patients included in this group were rated by their psychotherapists as manifesting more hostility than the 20 "control" subjects rated less hostile by these therapists. (These "control" subjects are not included in this resume.)	Walker, 1950 (8)
Disturbed Adolescents (N-50)	Thirty boys, twenty girls, mean age 15.0 (range 11-18). All required psychiatric consultations. Thirty-four were in-patients in a children's unit of a state mental hospital; sixteen were out-patients in the Diagnostic Clinic of the same hospital.	Joel, 1948 (4)

TABLE I *(Continued)*

Type	Description of Subjects	Author
Asthmatic Children (N-30)	Nineteen boys, eleven girls; mean age, 10 years 6 months (range 6-14 years). Patients at community service allergy clinics for treatment of asthma. Families of children were: 67% minority group members (40% Negro, 27% Mexican); 28% were from broken homes; predominantly from homes of lowest economic group (over 50% of fathers were laborers). (A matched control group of non-asthmatic sibling children was in the original study but is not included in this resume of results).	Fine, 1948 (3)

marily by *interaction* among the selected figures (with animal figures, with strangers, acquaintances, spouse figures, parents and children). There is a great deal of spontaneity in searching for human contacts, with corresponding accepted reciprocity in relations with other people. The characters of the normal's stories show a definite tendency to accept responsibilities and maintain their independence and self-esteem; these characters seem well adjusted to reality and have well-integrated moral standards.

The normal subject is rarely over-stimulated by the material; the stories he does tell, although they often have themes of violence, are rarely those that perceive the environment as dangerous or threatening.

SCHIZOPHRENIC ADULTS

Picture

Typically the schizophrenic adult uses either very few (0-2) or very many (8 or more) test figures. He may do relatively unusual things with the figures like placing them on the background as though they were in mid-air, placing them upside down, along the margins, or with their feet off the "ground"; or he may take the figure and actually "walk" it like a doll. He tends to use the following test figures: M-8 (priest), and F-4 (slattern-looking young woman). He may refuse to tell a story (i.e., reject the background), or he may use the background-picture symbolically as a concept or for its mood.

Story

The schizophrenic adult subject may use a test figure to represent himself, or he may use more than one test figure for one character in his story, or he may use a figure as a concept or for its meaning. There is little interaction among the test figures in the schizophrenic's stories; outstanding themes are of social isolation, constriction when forced to interact socially, and a prevalent tendency to avoid emotional involvement. The schizophrenic adult stories reveal domination over people in fantasy as a means of securing status. The schizophrenic themes indicate that he is fearful and insecure and that he perceives the environment as painful, dangerous, and hostile. The schizophrenic seems either to inhibit his fantasies of hostility (there was little hostility in the schizophrenic's stories) or to abandon himself to it completely (when the schizophrenic tells hostile stories they are really hostile). Although like the neurotic he feels guilt-ridden, nevertheless (and unlike the neurotic) he tends to project his guilt onto the real environment. There appear to be hetero-

sexual conflicts in the stories rather than themes of marital security.

Aphasic Adults

Picture

The aphasic uses an average of two figures per story, with little deviation from this pattern (Mean, 2.2; S.D., .9). Lack of any figures or over-population are both infrequent. By and large, like the schizophrenic group, above, they do not use the figures which were typically selected by the normal adult group, above. There is infrequent bizarre placement of figures on a background. The five patients who were totally without motor speech were apparently able to comprehend the examiner's instructions; all of them selected and placed figures on the background in what looked like a purposeful manner.

Story

Aphasic verbal productions, such as they are, tend to show a relative paucity of narrative material; there is greater emphasis on description. This description is characterized by over-attention to details of the test materials (concreteness). There is a greater inability shown on the unstructured backgrounds (Blank, Dream, Stage) than on the structured backgrounds. Relatively little personal interaction appears in the aphasic records, even among the few figures they choose. There appears to be a general loss of social inhibition in the stories, especially in regard to sex and violence. The aphasic stories indicate concern over their own aggressive impulses and over their own masculine status; there is also a noticeable emphasis on dependency themes and concern with dependency status. Like the schizophrenic, and unlike the normals, the entire group of aphasic records were heterogeneous; there were no "popular plots" or characteristic themes for the different backgrounds.

Suicidal Adults

Picture

The division of the suicidal population into Attempted Suicide and Threatened Suicide provides the most meaningful breakdown of the "objective signs" of the Figure Location Sheet. The former chooses an average of 3.37 figures per background; the latter 2.75 figures per background. The test figure most frequently chosen by the attempted suicide group is M-5 (policeman). The most "popular" test figure for the group whose members had threatened suicide (but made no actual suicide attempt) is M-15 (man with right hand in his pocket). Several subjects of either group place the figures in a relatively unusual fashion ("walking" them along the background, placing them partially outside the background or at angles to the "ground"); however, this is not consistent for either group or for any particular background, but appears throughout the records of those individuals known to be most disturbed.

Story

(a) Stories told by suicidal patients who had *threatened* but had not attempted suicide deal predominantly with themes of hostility and aggression. They attribute depressive characteristics to their figures, but add agitated features as the essential criterion differentiating them from attempted suicidals. Frequent frustrating situations are recounted with the re-

action most commonly one of irritability. In their hostile relationships it was the father-figure who was most frequently the object. (b) The *attempt* suicidals, on the other hand, reveal depressive but more characteristically resigned or melancholic, trends in their stories, and also show less guilt. In particular, they posit situations which are not so frustrating and which are more easily resolved. (c) The *serious* suicidal patients deal with themes in which the hostility is intense. Because they are so concerned with the problem, their fantasy productions in the stories are filled with continual reference to suicide whether it be a side comment or an actual action in the story in which one of the characters commits the act. While depression is a fairly constant theme it is marked by a resigned attitude. (d) This is in contrast to the *non-serious* suicidals who also employ depressive themes but show agitation as a characteristic feature. They seem concerned with guilt feelings and frequently cause their characters to justify their activities.

HOSPITALIZED NEUROTIC ADULTS

Picture

The hospitalized neurotic uses an average of 3.2 figures in populating backgrounds; there is both a large intra-variability in the number of figures chosen (for the same subject with different backgrounds) and a relatively large inter-variability among the subjects (S.D. 1.69). The most frequently chosen test figures are the following: M-2 (man undressing), M-5 (policeman), M-9 (man with briefcase, possibly doctor), and A-1 (cocker pup). Almost no nude figures are chosen. There are no bizarre placements of figures.

Story

Stories told by the hospitalized neurotic adult, like those of the normal adult reveal a great need for interpersonal relationships, but the neurotic seems free to manifest them only in a secure setting —almost exclusively in marital situations. Moreover, neurotic adult stories show trepidations in interpersonal strivings and little of the reciprocity of human contacts found in the stories of the normal adult. The characters in the neurotic stories tend to withdraw from interpersonal frustrations rather than face them; they are anxious, fearful, inadequate people. The hospitalized neurotic adult appears to compensate for lack of status by fantasied dominance behavior and fantasied expressions of aggression. Neurotic adult stories show preponderant expressions of guilt, although unlike the schizophrenic stories, this guilt is not projected onto the environment. The hospitalized neurotic adult appears to be more limited than the normal adult in his acceptance of social mores. In contrast to both normal and schizophrenic adults, the hospitalized neurotic adult seems over-stimulated by the test material, indicating greater anxiety and/or different means for handling anxiety.

HOSTILE ADULTS

Picture

The average hostile patient uses approximately three figures per story, with little deviation from this pattern (Mean 2.75; S.D., .8). Lack of any figures or over-population is rather infrequent. In general the figures selected are similar to those chosen by the normal

adult. The most conspicuous exception to this was the frequent use of F-4 (a slattern-looking young woman).

Story

Due to the heterogeneity of this sample, the stories vary in content from the somewhat banal plot of the defensive normal to the bizarre, idiosyncratic fantasy of the schizophrenic. Strong feelings of hostility do, however, appear in the records of most subjects. Characteristically, the hostility is expressed in various indirect ways. Derogatory, critical remarks might be made about a character in terms of hostile wit; or people are injured or killed as the result of an "accident," disease or the war. Usually when a specific aggressor is mentioned, this person (or animal) suffers some form of social punishment following the hostile act. Male authority and male peer figures tend to be the most common objects of hostility.

Disturbed Adolescents

Picture

The disturbed adolescent typically chooses relatively few figures per background; a high incidence of his stories contain only single characters. He tends most frequently to choose test figure A-1 (cocker-pup), often placing it on a background before selecting any human figures, and sometimes using it alone in the story. Other popular test figures, in their order of preference, are the following: L-4 (ghost), M-2 (man undressing), M-7 (supine figure with blood spots), L-6 (ugly witch), C-9 (little boy crying). Only three of these six most popular choices are human beings. The disturbed adolescents reveal many deviant approaches in handling the figures, such as nonchalantly tossing the figures on the backgrounds and leaving them where they fall, or moving the figures in and out of the picture as the story progresses.

Story

Most of the stories are fairly short—less than 100 words in length, while of the others, a few are quite long. Certain themes are readily apparent. Strongest of these are those of intense feeling of rejection on the part of the disturbed adolescent and the related themes of achieving some sort of love gratification (from a maid or a dog or from Superman) and of getting even with the rejecting parents. This last theme shows up in the tremendous amount of hostility where adults are killed in "unusual" background pictures such as the Livingroom and Bathroom and where punishments such as hanging and imprisonment are the endings for many of the stories. Frequent narrations of arguments between a husband and a wife probably reflect actual case history material for this group; the resultant psychological effects are hostility, isolation and fear. Stories for the disturbed adolescents have an excited tone and although they appear "adolescent"—in the sense that they have "happy-ever-after" endings in many cases, in the childlike use of the ghost, the blending of reality and imagination, etc.—they also appear "disturbed"—in the sense that there is a great amount of easily expressed hostility, anti-social behavior, blatantly sexual interest in heterosexual activity, and almost a poignant picture of the lonely rejected state of the story-teller.

ASTHMATIC CHILDREN

Picture

Asthmatic children as a whole tend to choose a somewhat higher mean number of figures per story than their "non-asthmatic" siblings, averaging slightly more than four test figures per background. Mother figures and Father figures are much more frequently selected by the asthmatic children (especially by the girls) than by their non-asthmatic siblings; in addition, these figures are more often used together in one story to represent family life by the asthmatic. The asthmatic child usually avoids the use of both male and female adult nude figures (M-1 and F-1); this tendency is decidedly more pronounced in the asthmatic girls than in the asthmatic boys. Asthmatic children tend to use more medical and "blank-faced" figures. The total number of "hostile" test figures (Figures M-6, gangster; M-7, supine figure with blood spots; N-5, Negro zoot suiter carrying knife) chosen is almost equal for asthmatic and siblings; however, the asthmatics use a significantly greater number of "hostile" figures in populating the Dream background and fewer "hostile" figures in the Street background.

Story

Stories produced by asthmatic children show a greater need for people and a stronger desire for a good solid family life than do the stories of their non-asthmatic siblings. As a group the asthmatic children's stories demonstrate a far greater degree of dependency than do their siblings (with strong oral drives, a significant tendency to avoid "escaping" from parents as a solution to an arising problem, and a greater need for help and succorance). The conflict between accepting dependency and asserting independence is particularly pronounced for the asthmatic children; the asthmatic boy's reaction is to stress his dependency needs, while the asthmatic girl's stories reveal a striving for independence which she attempts to subdue. Asthmatic children's stories show a greater amount of sexual conflict centered around the parents than do the non-asthmatics, with this conflict particularly strong in the asthmatic girl. The asthmatic's stories show more preoccupation with fatigue, sickness and pain. Pleasurable affect is infrequently used by the asthmatic children. There is an undertone of depression and sadness in their narrations, although crying seems particularly to be inhibited. There is a greater amount of repressed hostility in the asthmatic children, especially as directed toward parent figures. They show somewhat more verbal hostility than physical hostility; the reverse is true for their non-asthmatic siblings.

SUMMARY

A resume of results obtained with the Make-A-Picture-Story (MAPS) test from dissertations and published articles is presented. Eight different kinds of subjects have been investigated: normal adults, schizophrenic adults, aphasic adults, suicidal adults, hospitalized neurotic adults, hostile adults, disturbed adolescents and asthmatic children. A summary of the choice and placement of the test figures on the test backgrounds *(Picture)* and of the verbal production given to the stimulus situation thus created by the subject *(Story)* is given for each type of subject.

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CASE STUDY

Rorschach Records of a Schizophrenic Patient Before, During and After Electric Shock and Insulin Treatment

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A series of Rorschachs on the same subject during the course of an illness offers a unique opportunity to study personality changes and to relate these changes to clinical data. The protocols here presented are of special interest since they are from a patient who was at one point released as recovered from a depression and returned within twenty-four hours with acute schizophrenia. It is thought that a study of the Rorschach tests taken during the patient's illness and at the time of stable remission can be instructive in showing how the Rorschach reflects the course of such an illness and also in indicating the relation between one kind of depression and schizophrenia.

A twenty-eight-year-old woman entered a private sanitarium for mental illness with the chief complaints of depression, insomnia, and internal pains. The patient had completed three years of high school and was married at the age of seventeen. She had two children; the marriage was apparently happy. Ordinarily she made friends and liked to go to parties and dances, but since the beginning of her depression over one year previously she had become afraid of meeting people for fear she would not say the right thing. Eight months before entering the sanitarium she had had a laparotomy —one ovary and part of the uterus were removed. There was an exacerbation of the depression after the operation and she talked about committing suicide but made no overt attempts. At entry to the sanitarium she had the feeling that nothing was worth while. She revealed that six months previously she had thought she heard voices while on a bus with her husband; he had told her to forget it.

The psychiatric diagnosis at time of entry was schizophrenic depression. A series of electric shock treatments were given over a period of four weeks. After a few treatments, improvement was noted; her depression was eased. At the discontinuance of the treatments her condition seemed much improved, but she lacked vitality and there was some concern as to the completeness of her remission. A week later, however, she was discharged as recovered from the depression attack.

Twenty-four hours later the patient was returned to the sanitarium with active hallucinations; she thought her children were calling to her, thought her sister was saying things about her and smelled strange odors. The diagnosis on re-entry was paranoid schizophrenia. A second series of electric shock treatments was given, followed by a course of insulin. In all she had twenty insulin comas over a period of four weeks. Marked improvement was noted at the discontinuance of the insulin. She talked with more vivacity, initiated conversations, made plans and was active in occupational therapy. Her condition was quite different

from what it had been at the end of her first course of electric shock treatments. A week later, she was discharged in complete remission. A check made twenty-two months later showed that her recovery had been maintained since her discharge.

Four Rorschachs were administered to this patient: (a) the day after her first entry, (b) the day she was discharged the first time, (c) the day after her second entry, and (d) two days before her second discharge. The responses on these four Rorschachs are presented in Table I in four parallel columns to permit ease of comparison. (Table II presents a comparison of the quantitative data.) Additions and elaborations obtained in the inquiry are enclosed in parentheses. The Testing of Limits for the four examinations follows after card X. The effect of the Testing of Limits on later tests is difficult to evaluate. The changes in these records which can be accounted for by previous Testing of Limits seem to be minor. The patient had no conscious memory at the second and fourth examinations of having taken the test previously.

Comparison of the Rorschach factor relationships for the four records shows the following:

1. The number of responses remained about constant with the exception of the third record, made at the time of re-entry to the sanitarium, when the patient gave nearly twice as many responses as at time of first entry. Some, but not all, of this increase might be due to previous Testing of Limits.

2. At initial entry, when her main complaint was depression, the average time per response was 111"; otherwise it was always less than 25".

3. In both the first and second records the average reaction time for colored cards was more than twice that for achromatic cards. In the third and fourth records they were approximately the same.

4. In the first record when depression was the presenting complaint, F% was 50; it was also 50 at time of second record. In the next two it was less than 40, with the lowest per cent on the last record.

5. A% varied from 58 to 70.

6. The number of P's showed an increase through the four records, starting at 3+1 and increasing to 5+1 on the second, to 7 on the third, and to 7+1 on the fourth record. The significance of this change is masked by the unknown effect of Testing of Limits.

7. There were no Originals on any of the records.

8. Sum C was 2 or above at time of each entry and decreased to 1.0 or below at time of each dismissal, the lowest C being at time of last dismissal. In this case it seemed to vary directly with degree of clinical indications of schizophrenia. This is associated with the fact that although FC remained between 1 and 2 for all records, CF was 1 in the first and 2 in the third record, becoming zero in the second and fourth records.

9. Whereas sum C decreased with each remission, M increased —the highest being at time of second remission.

10. FM increased steadily from +1 at first entry to 1+1 at time of first remission, to 2+1 at time of second entry, and finally to 4 at time of second remission.

11. Diffusion responses decreased with remission, being 1 and 2 respectively in first and third rec-

TABLE I—Comparison of Four Rorschachs

	1st	*2nd*	*3rd*	*4th*
I.	70″ **Bat** W F A P 72″	05″ Bat (Could be a bird. Bat because black and the outline.) W FC′ A P 13″	10″ Wasn't that a bat? (Black and looks like wings, body and head.) W FC′ A P 13″	06″ Bat. Is that what you want? (Being black, body part and wings.) W FC′ A P 10″
II.	What if you don't know what it looks like? Doesn't remind me of anything. 155″ A butterfly I guess. (The lower reminds me of what they have out on their—not much like a butterfly, just general idea. Outline and colors too.) (Whole) DW FC- A 157″	30″ Looks like two little girls. (Add: Butterfly—it's a bright color.) (Lower Center D) (Add: Animals with noses up against each other—two little black bears.) D F H Add: D FC A Add: D FC′, FM AP 35″	15″ Two little bears with the noses against each other. (Looks like teddy bears.) (Have no feet.) Or a couple of little fairies (upper red). And the butterfly (lower red). (Because of bright red, feelers, body and head.) D F, FM (A) P D F (H) D FC A 40″	06″ Two little bears with their noses together and paws up together. These two little—don't know what to call them—in fairy tale book. (Fairy tale elves—on top of bear's head, don't know why they are there. Hands out waving to each other.) W { D FM A P D M (H) 44″
III.	45″ Couple of men. (Look like leaning back and holding on to something.) W M H P 46″	04″ Two men. (Holding on to something or bracing, or leaning back.) W M H P 05″	04″ Couple of men kind of leaning back. (Holding on to something or bracing.) W M H P 09″	06″ Two men leaning back—hanging on to—bracing themselves—hanging on to something, don't know what. (Might have a big tie on in front.) 28″ W M H P
IV.	They all just look like blots of ink. 168″ Something like a frog. (Frog eyes.) (Whole) W F A 170″	04″ Head of alligator. (Just does; the shape and eyes.) (Lower Center D) D F Ad 05″	04″ Alligator head. (Lower head) (The eyes) A bat. (Whole) (Did I say a bat? Not much like a bat. Could be a bat.) D F Ad W F A 09″	20″ Reminds me of some animal, but let's see what. Little like an alligator head. That's all I can see in that. (Rest of it doesn't go with the head.) (Add: Looks something like skin of animal—don't know what kind of animal — dried

TABLE I—(Continued)

	1st	*2nd*	*3rd*	*4th*
				skin stretched out; outside. Might have fur. Lower is an animal's head and other part is the skin of an animal.) D F Ad Add: W cF Aobj 47″
V.	18″ That one looks like a bat too. (The wings outspread like that and the body. Like you see them on walls and like that.) W F, FM A P 19″	02″ Another bat. (This looks more like a bat than the other. The color—it's all black and the shape.) W FC′ A P 03″	03″ And that looks like a bat. (Wings outspread, body, kind of feet. Is black. Is flying.) W FM, FC′ A P 05″	Does it matter which way you turn them? 15″ Well, that reminds me of a bat. (He's flying—wings out.) (Think it is the black color. If colored, might remind me of something else.) W FM, FC′ A P 32″
VI.	08″ Looks like a turtle. (Flat and shape. Top of him.) W F, Fc A 09″	11″ Looks like a turtle. (The neck and the shape.) W F A 12″	05″ That looks like a turtle. (Head, feet and body. It's color; no, not the color. The design. the roughness.) W Fc A 11″	10″ Turtle. (This (usual feathers) doesn't go with turtle. Might be that the neck is out over something. Looks like walking. Not too much like shell. Not convex; is rough like shell.) W FM, Fc A 15″
VII.	42″ Clouds. (Whole; outline and just looks like clouds.) W KF Clouds 44″	05″ Two little ladies. (Looking at each other.) W F, M H 07″	02″ Clouds. (All of it looks like clouds.) Couple of old ladies looking at each other. (Look like might have hair done up on top. Look old because of way hair done	12″ Two old ladies with their hair done up on top of their heads. (Look like might be talking to each other. Have gray hair rolled up on top of head. Motioning with arm out one

TABLE I—(Continued)

1st	*2nd*	*3rd*	*4th*
		up and their face.) W KF Clouds W M H 11″	way. Don't know what the lower one reminds me of.) (Add: The whole reminds me of clouds, dark clouds. Not the sky.) D M, FC′ H Add: W KF, C′F Clouds 19″
VIII. I don't know what to tell. 145″ Looks like two animals; don't know what kind. Mice I guess. (Legs, head and body, no tail.) D F A→P 236″	05″ Two bears—polar bears. (Like they are walking on rocks. Don't look like rocks, but ice. Look like polar bears because of their light color. Could be some other animal. There are rats that look like that—the head.) W FM, FC′ A+N P 06″	03″ Looks like two bears. (Look like polar bears walking on rocks, stepping on rocks or maybe ice. Looks like ice because rough. Looks like polar bears because light. Looks too like mice—not mice, some other animal, beaver or something.) Or clouds. (The color and shape—all except the part that is the bears.) W FM, FC′, cF A+N P dr CF Clouds 06″	25″ Let's see, it's two animals, but just what kind, I don't know. Something like bears or rats—I don't know which. (Feet—looks like it might be walking on rocks or climbing. Not the color of rock. They're climbing on something — just rough.) W FM, cF A+N P 54″
IX. 22″ Looks like a butterfly. (It don't look anything like a butterfly. It just reminds me of it—the wings and the part down here is the body. The color more than anything makes it look like a butterfly.) W FC A 23″	31″ Butterfly. (Because of the bright color and the shape.) (Omitted lower part.) W FC A 32″	04″ Looks like clouds. (Bunch of clouds; the colors, the pink, you know—No, that's not right, because clouds aren't colored. It looks like clouds—just the outline more than anything.) Or a butterfly. (This is the body and the	18″ Don't know what that would be—butterfly I guess. (The colors give me idea and the outline reminded me of wings of butterfly.) (Omitted lower part.) W FC A 19″

TABLE I—(Continued)

	1st	2nd	3rd	4th
			wings; the color.) (Omitted lower part.) W KF Clouds W FC A 07″	
X.	Does it have to remind you of something or— 234″ Just a lot of colored paint. (Looks like something a child would start with colors—just dabbles around and not make anything.) (Add: Little elf, mouth, something you would see in fairy books.) W CF Art Add: D F (H) 335″	10″ This looks like a rabbit. (Head only.) Also a couple of elves. (Looks like they are looking at each other.) Also couple of butterflies. (Not too much like butterflies. (Q. Why) Wouldn't look like butterflies if were black.) D F Ad P D F, M (H) D FC— A 26″	09″ Looks like clouds. (Because they are blue and the outline around them.) Rabbit's head. (Head only.) Couple of fairy elves or something. (Top notch, eyes, mouth, legs —(upper grey)) Two spiders. ((Q) More like spiders than clouds.) D CF Clouds D F Ad P D F (H) D F A P 29″	10″ Rabbit's head. Two little elves—in fairy book. (Things on head, mouth and eye—kind of holding on to something and peaking around at each other.) Two spiders. (Add: Couple of green worms.) D F Ad P D M (H) D F A P Add: D FC A P 26″

TABLE I (Concluded)—TESTING OF LIMITS

1st	*2nd*	*3rd*	*4th*
II. (Bears facing each other?) In a way I see it. (Q) What did you say it was? (Repeat) (Saw it with nose at unusual place.) (Shown popular.) Can see it now.	Best: 2, 3, 8. Least: 1, 10, 5.	X. (Caterpillars?) Found OK. (See before?) Yes. (This morning?) Yes, I saw them but didn't mention them.	II. (Clowns?) (Difficulty in seeing clowns because it looked like bears so much.)
II. (Clowns?) (Not till shown.) (Q) Looks more like it now. (Better?) Bears.	VI. (Skin?) Yes.	(Animal skins?) (Picked out VI and IV.) (Kind and compare?) IV: that might be a funny looking alligator. Looks like alligator's head and that's the reason it looks like alligator's skin. (Kind of skin?) Don't know what kind.	III. (Hair bow?) Yes.
VI. (Animal skin?) Yes. (Compare IV and VI.) IV—more a monster. VI—smaller.	IV. (Also skin?) Yes—(Different?) IV is larger. (Q) Because of head. (Fur on inside or just outline?) If this is fur it is shorter than in VI. (Not especially furry.)	(VI kind?) Looks like turtle, but couldn't be turtle skin because they don't have turtle skins. (Bear or fox or rabbit skin?) Let's see what kind of skin could that be? (Not bear skin for whole?) No. (W?) Kind of looks like a bear skin. (Outside or inside?) Outside. (Q) Because it kind of looks like fur in a way—not too much.	VI. (Animal skin?) Yes. (Q) Outside. (Q) Fur. (Can you use color any more?) The animals (VIII) (Q) Can't think of any that are pink. The butterfly (IX) used color there—(a new response). Nothing except looks like water colors (IX and X) (No F.)
VII. (Two women?) (Seen with no cues.)	X. (Caterpillars?) (S pointed to grey and then to pink.) (Popular shown.) Accepted. (Crabs?) Found OK.		
VIII. (Animals stuffed or alive?) Alive—Looks like it climbing. (Before?) Didn't think about it.			
X. (Crabs?) or (Spiders?) Found OK. (Rabbit's head?) (Cues given.) Found OK. (Caterpillars?) Hesitantly found (Q) Long and wriggly looking. (How about C?) Helps some.			

TABLE II—Comparison of Quantitative Data of Four Rorschachs

	1st	*2nd*	*3rd*	*4th*
M	1	1+2	2	4
FM	+1	1+1	2+1	4
m				
K	1		2	+1
FK				
F	5+1	6	7	3
Fc	+1		1	+1
c			+1	+2
C′		2+2	1+2	1+3
FC	2 (1=−)	2+1 (1=−)	2	1+1
CF	1		2	
C				
W%	90	58	53	46
D%	10	42	42	54
d%	0	0	0	0
Dd+S%	0	0	5	0
R	10	12	19	13
T/R	111″	12″	7″	22″
Av RT to C′ cards	61″	5″	5″	13″
Av RT to C cards	120″	16″	7″	13″
F%	50	50	37	23
(Fc+FK)/F	.09	0	14	17
A%	70	67	58	69
No. of P	3+1	5+1	7	7+1
No. of 0	0	0	0	0
H+A:Hd+Ad	8:0	10:2	13:2	11:2
ΣC	2.0	1.0	3.0	.5
M:ΣC	1:2	1:1	2:3	4:5
(FM+m): (FC+c+C′)	0:0	1:2	2:2	4:1
% R to last three cards	30%	42%	42%	38%
W:M	9:1	7:1	10:2	6:4

ords, and 0 and 0+1 respectively in second and fourth records.

12. Surface texture was slight and seemed to be unrelated to the course of illness.

13. C′ increased slightly with remission. It was 0 at first entry and 2+2 at first remission. It was then 1+2 at second entry and 1+3 at second remission.

14. None of the records showed m or FK.

15. The number of responses to the last three cards remained at an approximately normal expectancy level.

16. The W:M ratio exceeded the optimum 2:1 ratio in the first three records and approximated more closely the 2:1 ratio in the last record.

17. In all records W was overemphasized, the greatest overemphasis being at time of first entry. D was normal only at time of second remission, it being greatly underemphasized at time of first entry and slightly underemphasized at time of first remission and second entry.

These results show that there were some changes from first entry to first remission that were repeated from second entry to second remission. To summarize these: Sum C decreased, reflecting a decrease in CF; M increased; C′ increased; K decreased; W decreased; and D in-

creased. Thus, the uncontrolled emotionality represented by CF became controlled through a shifting to a more cautious approach, there was a higher inner integration, and there appeared to be a more concrete approach to problems with less tendency to react to a whole situation without attention to details. The characteristics which were unique at the first entry when depression was the chief complaint were long average time per response and overemphasis on W. In the following three records, time per response was markedly decreased, W% was decreased with a corresponding increase in D%, FM was increased, and P was increased.

Of considerable concern is the comparison of the second and fourth records. Could the patient's return within twenty-four hours be predicted from the second record and her continued recovery be predicted from her fourth record? What are the essential differences in the two records?

Record four in comparison with record two looks like that of an individual with freer feelings and possibly more anxiousness. There is an increase, at least in the additionals, of shading responses. Lack of affect was one of the suspicious factors at time of first discharge. Increase in reaction time to achromatic cards on the fourth record suggests that along with the greater response to texture there was more concern over shading which would substantiate the evidence of a withdrawing from emphasis on bright colors to more emphasis on texture.

If we can infer that the patient's recovery consisted of a return to her prepsychotic status, we can use the fourth record as an indication of the patient's prepsychotic personality. This record shows an introverted person who was self-effacing, cautious, shy and anxious, but who maintained her adjustment because of inner stability and inner resources. The record taken at the time of her first entry to the sanitarium shows a loss of inner control and some lack of emotional control. There were very few shading responses, and a depression tendency was noted in the long reaction time and the tendency toward constriction. After electric shock treatments, the outward depression was gone, reaction time was reduced, inner stability was increased. There was an absence of enlivenment, however, as indicated by low FM, and by C′ exceeding C responses. The record was like that of a person trying to force an adjustment to the environment (FM + m: Fc+ c+C′ was 1 to 2 whereas M: sum C was 1:1). The prognosis might be considered poor. When the patient made her second entry, there were again indications of impulsive emotionality as seen in CF. However, the constriction and delay in response of the first record was lacking. It would seem, then, that the constriction and slowness to respond were defenses against a more psychotic reaction. This suggests that the depression itself was an attempt at defense against schizophrenia. After it was removed and she returned to presumably the same situation that initially precipitated her illness, she had no defense against schizophrenia and it developed full blown within twenty-four hours.

Inspection of changes on individual cards in successive examinations shows that the greatest changes occurred on cards II, IV, VII, and X. On card II, the first

record shows a butterfly of inferior form; the second elicits two little girls (without life-like qualities) plus a better seen butterfly and the black bears in the Inquiry; the third record elicits the same popular bears without the use of black color, fairies in the area in which the little girls were previously seen, and the same butterfly; the fourth record retains the bears with more active movement projected into them and the fairies which are also seen in movement. Thus, marked improvement is seen in this sequence. On IV, the whole area is poorly seen as a frog on the first examination; the more usual alligator head is seen the second and third time, with the whole also poorly seen as a bat the third time; the fourth time the alligator's head is retained and the remainder of the blot is for the first time seen as a fur skin. On card VII, the first and third records produce clouds as the primary response. The second record produces the two commonly seen female figures with restricted liveliness and these are carried over to the third record as a second response. The fourth record gives active movement to the female figures and adds the clouds in the Inquiry. Responses to cards VIII and IX are fairly similar in the four records with the exception that at the time of the second entry, clouds are perseverated from card VII through cards VIII and IX and into X. On X, in addition to the perseveration of clouds on the third record, a steady increase in number of P's seen is noted from first testing where none was seen, to last testing where all three were seen. Moreover, elves, which were introduced at time of second testing with only a tendency to movement, lost the tendency to movement in the third record, and became actively moving in the fourth record.

In none of the records were there any bizarre responses. None of the form levels dropped below a −.5 (according to Klopfer's method of scoring form level). There were no pure C's used and no contamination responses. A confabulatory response was scored for the response to card II at the first testing, but the scoring was somewhat doubtful, and no other confabulatory responses were scored. Possibly the frog on card IV at the first testing was also a confabulatory response, but Inquiry was not sufficient to establish it. There were no clear-cut schizophrenic indications on either the first or second examinations. The perseveration of clouds for four cards at the time of the second entry reflected schizophrenia at that time when the clinical indications of schizophrenia were clear-cut. The indication of incipient schizophrenia in the other two examinations would have to be picked up largely from the low M, exaggerated W, the tendency to DW, and the low P of the first examination, and the tendency to perseveration of butterfly on the second record (on cards II, IX, and X) ending in an FC− on card X. This perseveration did not appear on the first examination.

Summary

Comparison of four records taken during the course and at time of remission of a schizophrenic patient shows that the clinical changes in the illness were associated with changes on the Rorschach. In the main, the Rorschach changes were subtle with low M and FM, low P, tend-

ency to confabulate and perseverate, W overemphasis, CF greater than FC, and high F% being associated in varying degrees with the various stages of the schizophrenic illness. Bizarre responses and grossly inferior form were not present in any of the stages. There were none of the characteristic indications of paranoid tendencies present, although the schizophrenia was characterized by paranoid delusions. It is apparent that Rorschach interpretation requires attention to subtle nuances in order not to miss some schizophrenic diagnoses. The study also shows the way in which a depression may serve as defense against schizophrenia.

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BRIEF REPORT

Rorschach Patterns in Conversion Hysteria

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Clinically, the conversion hysteric has been a focus of psychiatric interest for some time. Many of the classic psychodynamic formulations worked out by Janet, Charcot, and Freud were derived from observations of this type of patient. However, in general, the study of conversion hysteria on a systematic objective basis has been limited and has been confined mainly to presentation and discussion of striking individual cases. It is particularly true that there has been no systematic attempt to find out if the conversion hysteric gives a characteristic Rorschach pattern. Can the Rorschach test be profitably employed in the diagnosis of conversion hysterics? Of what use is it in evaluating the status and prognosis of such cases? Is there a relationship between conversion symptomatology and the character of Rorschach productions? Some brief references to these questions can be found in the writings of Rorschach (4), Klopfer (3), and Beck (1), but these references are incidental and unsystematic.

The present paper is mainly a description of the Rorschach records of twenty female conversion hysterics. These records were secured as part of a broader study (2) in which there was only incidental interest in the hysterics as a clinical group. All of the patients included in the group were diagnosed "conversion hysteria" in either the in-patient or out-patient department of the Illinois Neuropsychiatric Institute. Considerable care was taken to choose those cases in which the conversion symptomatology was clear-cut. In order to have as uniform a group as possible, only women subjects were used and then only if they fell within the average range of intelligence—either as defined by the Verbal Scale of the Wechsler-Bellevue Intelligence Test or the Otis Self-Administering Test of Mental Ability. The age range of these patients was from 18 to 50, with a mean of 35. Their average educational achievement was ten years.

Table I presents the Rorschach scores of the subjects. As one analyzes these records, one is struck by the fact that the majority of them are constricted and limited. The more complicated determinants (M, FC, and FY) are either absent or sparse. More than half of the group have animal percents (A%) over 55. Over half of the group have one or fewer movement responses (M). Likewise, more than half have only one or fewer responses indicating controlled sensitivity to color (FC) or shading (FY). The median number of FC's is 1.0 and the median number of FY's is 1.0. It is interesting that the amount of loose color (C and CF) in the group is also limited. Only five of the twenty patients give even one pure color response (C); and more than half give either only one CF or no CF at all. This later finding stands in contradiction to the general belief that hysterics give considerable loose color. Klopfer (3) and Rorschach (4) imply that impulsive color is to be particularly ex-

TABLE I—Some Individual Rorschach Scores of The Conversion Hysterics And The Medians And Ranges of These Scores

Subject	R	M	C	CF	FC	YF	FY	F%	F plus %	A%	P	S	T/IR
1	37	3	0	2	0	0	1	84	84	60	8	4	16.8"
2	23	0	0	0	2	0	1	83	88	70	4	2	48.0"
3	12	1	0	0	0	0	0	92	70	83	4	0	17.3"
4	13	0	0	1	1	0	2	69	100	54	3	0	37.6"
5	19	1	1	0	0	2	0	78	100	63	8	0	11.5"
6	12	3	0	3	0	0	0	50	83	42	4	0	22.1"
7	9	0	0	0	2	0	0	78	71	78	3	0	27.5"
8	23	1	0	1	0	0	0	91	65	61	4	0	17.0"
9	16	3	0	2	1	1	1	50	100	43	8	1	33.6"
10	11	0	0	1	0	0	0	91	30	18	2	5	38.0"
11	18	1	0	0	1	0	0	89	81	50	3	0	34.6"
12	19	1	1	1	1	0	1	74	79	58	6	0	12.7"
13	13	2	0	0	0	0	0	85	60	69	3	0	24.3"
14	21	0	0	1	1	0	4	71	64	43	2	4	38.6"
15	16	1	2	0	1	0	1	75	63	63	4	0	19.7"
16	39	5	1	2	3	1	2	64	54	51	7	0	14.8"
17	22	3	0	2	3	0	2	55	46	50	6	0	18.9"
18	19	2	0	0	0	0	2	79	85	79	2	1	12.7"
19	20	0	0	3	0	1	2	70	54	60	1	2	29.3"
20	35	4	1	0	0	0	5	71	92	51	8	2	9.2"
Median	19.0	1.0	0	1.0	1.0	0	1.0	76.5	75.0	59.0	4.0	0	23.3"
Range	9-39	0-5	0-2	0-3	0-3	0-2	0-5	50-92	30-100	18-83	1-8	0-5	9.2-48.0

pected of hysterics' Rorschach records. This is apparently not true of conversion hysterics' records. Altogether, the constriction and stereotypy here observed give a picture of "the average conversion hysteric" as an individual with tight defenses who has little internal freedom and who approaches problems with a rigid narrowly delimited frame of reference. Adjustment seems to be based on a denial of sensitivity and a hemming in of the self with repressive barriers. This picture is, of course, analogous to that which is implied in the concept of "belle indifference."

Despite the presence of the above described broad uniform trends in the data, it is clear that there are also real differences in patterns among the records. There are a number of instances in which the Rorschach psychograms imply not rigidity and constriction, but rather undue looseness or flexibility tendencies. This is true of those protocols that in varying combinations have a relatively high number of movement responses, poor form quality, and loose color. In an effort to determine the meaning of these differences in Rorschach pattern among the conversion hysteric subjects, the records were divided into three categories:

(A) Highly constricted records that have either no M or no pure C responses and no more than one CF, and whose F plus per cent is 65 or higher.

(B) An in between grouping for those subjects having not less nor more than one M and also no more than one pure C or two CF's, and who have an F plus per cent of 65 or higher.

(C) A third grouping in which looseness or flexibility appear in the form of either more than one M or more than two CF's or one C, or an F plus per cent below 65.

When the subjects had been thus classified on the basis of Rorschach factors, the clinical symptomatologies characteristic of the three groups were compared. Table II shows these data.

There appears to be a genuine relationship between Rorschach pattern and the type of clinical symptomatology manifested. It is striking how close the correlation is. As can be seen in Table II, the trend is for those with the most constricted guarded records to manifest limited circumscribed symptoms. However, those with looser records evidence more serious, more numerous, and more generalized symptoms.

Analyzing the groups in detail, one finds that in Group A the chief complaint is localized pain or sensitivity in some part of the body. The symptom is restricted and localized. One patient in the group does, in addition to localized pain, complain of vomiting attacks, but these attacks are only occasional and incidental. In Group B there is an increase in the severity and range of symptoms. Besides pain complaints, one finds instances of real difficulty in certain body functions. Two patients are disturbed chiefly by persistent vomiting attacks. One complains of pain in her leg, but furthermore indicates that she has much difficulty actually walking on the leg. Patient 12 describes local stomach pains but she also describes "general stomach trouble" and frequent periods of nausea. Group C patients present a wider scatter of complaints but they are with few exceptions of severe and some-

TABLE II—Grouping of Conversion Subjects on The Basis of Rorschach Constriction And The Correlation of This Grouping with Clinical Symptomatology

Subjects	*Symptomatology*
GROUP A (Highly constricted Rorschach records)	
2	Pain in lumbo-sacral area. Occasional abdominal pain and occasional vomiting.
4	Strong pain in back of neck. Occasional pain in upper arms.
7	Pain on left side of body. Occasionally feels dizzy.
11	Backache.
GROUP B ("In-between" Rorschach records)	
3	Pains and cramps in legs. Difficulty in walking for two years.
5	Nausea and frequent vomiting. Slight tremor in one leg.
8	Frequent vomiting attacks. Headache.
12	Pain in stomach. General stomach trouble. Nausea.
GROUP C (Loose or flexible Rorschach records)	
1	Hysterical convulsions. Periods when unable to talk. Amnesia.
6	Pains in abdomen and in all joints of the body. General nervousness.
9	Limitation of movement of one arm. Numbness of fingers and tingling of arm. Drops objects.
10	Collapsing and fainting spells. Shakes all over and loses control of legs from hips down.
13	Pain in eyes and in head. Headaches. Dizziness.
14	Generalized tremors. Shakes all over. Whole body jumps. Periodic paralysis of legs.
15	Lump in throat prevents swallowing. Headaches. Fatigue.
16	Low backache. Headache. Feels generally tense and nervous.
17	Uncontrollable muscle twitchings and convulsive seizure attacks.
18	Shooting pains on both sides of face, chest, abdomen, and periodically other parts of the body. Persistent cough.
19	Periods when unable to talk. Arms numb. One arm shows periodic tremor. Severe generalized nervousness.
20	Great difficulty in swallowing. Heart pains. Insomnia and generalized nervousness.

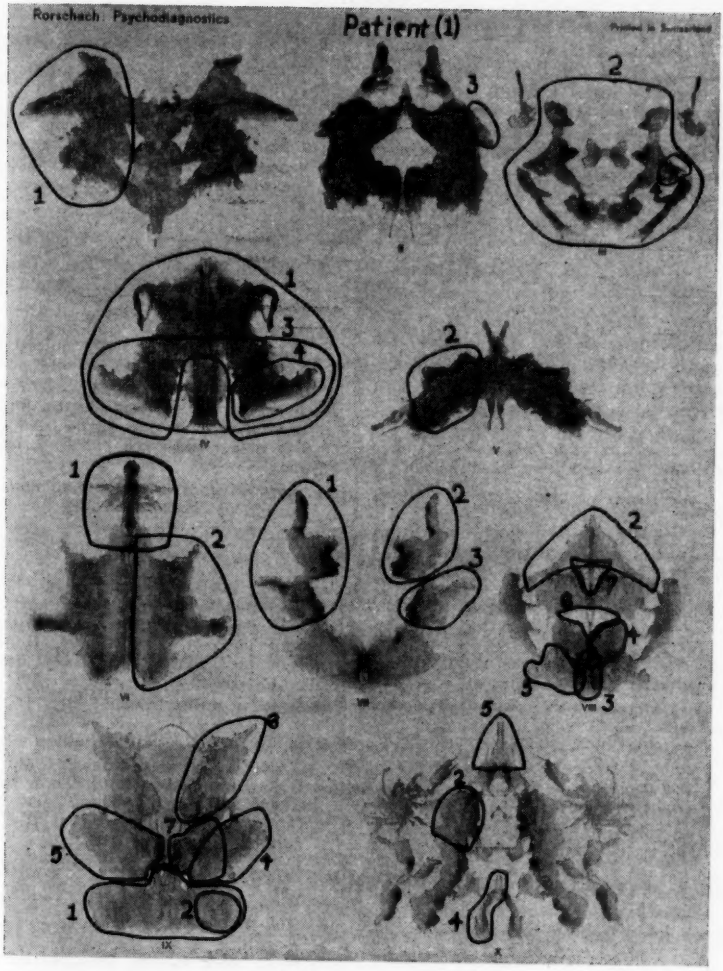
times disabling proportions. Four of the patients in this group manifest frequent convulsive episodes or "fainting spells," that were in a few instances initially confused with epileptic seizures. Two complain of widespread pain involving almost all parts of the body. Four present prominent classical hysterical signs, such as great difficulty in swallowing, periodic loss of speech, and numbness or tingling of parts of the body. That the relationship between Rorschach test and symptomatology is certainly not perfect can be seen from the fact that two of the patients in this group describe only generalized feelings of dizziness, nausea, and nervousness; and are perhaps more similar to those in Group B than to those in Group C. The question might be raised whether some of the patients in Group C with loose symptomatology and loose Rorschach's are perhaps early schizophrenics. This possibility cannot be ruled out and certainly these patients would seem to be better candidates than those in the other groups for future psychotic breaks. However, in terms of psychiatric evaluation none was considered to have shown signs of psychosis at the time the Rorschach tests were administered.

One can perhaps best highlight the essential differences between the Rorschach productions of the "constricted hysteric" with limited

symptomatology and the relatively "unrestricted hysteric" with more severe symptomatology by comparing in some detail an extreme record in Group A with an extreme record in Group C. Patient 2 affords a good example of such a Group A record and Patient 1 supplies a good example of Group C. The complete Rorschach records of these two patients are included in the present paper. Aside from such gross factors as limited response productivity, absence of M, and an F plus per cent of 100, the contracted sealed-in character of Patient 2's Rorschach record is conveyed by a variety of other signs. Thus, one finds upon examination of the record that eight of the thirteen responses occur on the first three cards, and cards VI, VII, and IX are rejected. The only two color responses (CF and FC) that are given both occur on one card (III). Even these two color responses were reluctantly expressed and in the inquiry it was difficult to obtain admission that color was a determinant. Initial reaction times for each card are very slow and the patient refused to commit herself with any specificity or personal elaboration in her description of percepts. Card I is an "insect" and even after questioning it remains "No special insect." Similarly, an area frequently referred to as a "butterfly" on card II is "Some kind of insect. No special kind." Only two responses referring to humans are present in the record and these are restricted to parts of humans, such as "hand" and the lower part of the body. Throughout, the picture is one of avoidance of nuance and evasion of personal commitment. Patient 1's psychogram with its three M's and its 37 responses is a real contrast to Patient 2's psychogram. But more than that, within Patient 1's record one observes a personalization of expression and a spontaneity not to be found in Patient 2's productions. Instead of bland percepts like "some kind of insect," there are such responses as "Gorilla," "His hands look like have blood all over them" and "Little kids with tongue out." There are six times as many responses with human reference in Patient 1's record and the general content of her other responses is wider. Patient 1's initial reaction time per card is one-half of Patient 2's initial reaction time. Furthermore, Patient 1 gives four white space responses and Patient 2 gives no white space responses at all.

Such trends suggest that more than moderate flexibility or lack of constriction in the Rorschach record of a conversion hysteric is a negative sign. Apparently, lack of constriction points to a failure to work out successfully restricted hysterical mechanisms and a falling back on more disabling and more regressive hysterical techniques. In this sense, the conversion case with a Rorschach record tending toward looseness should perhaps be considered less well guarded and perhaps to have a poorer prognosis so far as the development of disabling symptoms than the case with a Rorschach record marked by tight evasion.

Diagnostically, the Rorschach test seems to make no special or independent contribution in these cases. That is, there is nothing particularly distinctive about these patients' Rorschach performances which would permit one in the absence of other information to label them as "conversion hysteric."



Name: Patient (1) Age: 18 Date: 9/47

CARD I

12″

1 Mask—Halloween
WS F+ Mask

<V/\ 2 Donkey
D F+ A

95″

1 W—The eyes. Way mouth shaped. Cat mask.

2 Face, body, tail. (Entire lateral)

Card II

17″

1 Heads of bear.
D F+ Ad P

1 (Usual) Head, neck, "arms." General outline.

2 Two little kids with tongue out.
D F+ Hd

2 (Upper red). Forehead. Mouth, nose. (Q.) girls.

<VA 3 Engraving of a mountain. Like for George Washington.
Dd F+ Hd

3 Reminds me of a monument. Nose. Forehead. Vagueness of it helps to suggest mountain. (Outer edge of "bear head" detail).

40″

Card III

15″

1 Two people—and wind blowing.
D M+ H P

1 (Usual) Woman. Has purse. Carrying purse. Skirt blowing. Might be carrying umbrella too.

V 2 Two trees, and scenery.
D FY Scenery

2 Trunk. Leaves. Like kind they paint. Shape. (All except red) Contrast of colors. Grass—Because around sidewalk.

V 3 Two people.
D CF Hd

3 Just heads. Nose. Hair. Mouth. Blood coming from it. She might have cut her neck. The color of it. (Lateral red)

V 4 Heads of bird.
Dd F+ Ad
160″

4 Shape of it. The eye. (Small middle portion of "human" detail)

Card IV

10″

1 Gorilla
D M+ (A)

1 Hands look like they have blood all over them (irregular). Doesn't look very pleasant. Head. Nose. Hands. Feet. Just standing. (All except lower middle detail)

2 Giant

2 Same as gorilla.

V 3 Bat
Dd F+ A

3 Wings mostly. (Lower half)

V 4 People
D F− Hd
115″

4 Girl's head. Nose. Mouth. Hair. Hair way pushed back and way comes in. Could be boy with hat on. (Lower half of "boot" detail)

Card V

18″

V 1 Could be butterfly
W F+ A P

1 (W) Wings. Feelers.

<V< 2 Face
D F+ Hd
95″

2 Head, nose, mouth. (Most of lateral wing detail.)

Card VI

24″

1 Totem pole (Long pause)
D F+ Totem pole

1 Bar straight up. Head on top. Way things branch out. (Usual top detail)

2 Head of a king
D F+ Hd
135″

2 Has crown. Sitting on his throne. Because back of throne against his head. Beard. Nose. Mouth. Shape. (Lateral half of lower detail.)

CARD VII

20″
Oh, God! (disgustedly)

1 Dogs
D F+ A
1 (Usual) Legs. Paws.

2 People
D F+ Hd P
2 Just head. (Q.) A scrub woman. Hair do — Hair. Shape (Usual)

V 3 Head of elephant
D F+ Ad
3 Trunk. Eye. Shape. (Middle detail)

<> 130″

CARD VIII

1 Beaver (Long pause)
D F+ A P
1 (Usual) General shape. Head.

2 Moose head
D F− Ad
2 (Upper triangular detail) Antlers. Shape. Face shape. Eyes.

3 Head of ape
Dd F Ad
3 Eyes. Shape. (Middle portion of lower orange and red detail)

4 Frogs
D F+ A
(Long pause)
4 Neck up. Way up. Shape. Eye. Mouth. (Lateral red portion of total lower detail)

<∧ 5 More elephants
D F− Ad
5 Just head. Trunk. Shape of head. (Lateral orange portion of total lower detail)

6 Bat
DdS F+ A
6 Way shaped. (White space between "flag" detail and lower detail)

7 Skull of goat
DdS F+ Ad
5′45″
7 Horns. Bones make it look like skull. No color to it. (White space—"rib" detail)

CARD IX

28″ | V |

V 1 Another elephant
D F− Ad
1 Ear. Head. Trunk. Like Dumbo. (All of lower red)

< 2 Man
D F+ Hd
2 Man's head. Bald. Little hair. Forehead. Eyes. Nose. Mouth. (Usual)

∧ 3 Another ape
3 Can't find.

4 Side of a face of a little man
D F+ Hd P
4 Hair. Eye. Nose. (Green detail)

V 5 Rhinoceros (Long pause)
D F+ A
5 Outline of it. Head. Shape. (Green detail)

∧ 6 Clown
D M+ H P
6 Body. Hat. Just standing there. Hat on. Clown suit. (Upper orange)

7 Head of pig
Dd F+ Ad
300″
7 Nose and way it comes up. Shape. (Inner half of green detail)

CARD X

13″

1 Birds all over it
W CF− A
1 (W) Way shaped. Blue, yellow, etc. In general.

2 People
Dd F+ Hd
2 Head. Not like an American. Shape of it. Like an Eskimo boy. Shape. (Upper fourth of pink detail)

3 Octopus
D F+ A P
3 Way head is. Arms of it. (Usual)

4 Snail
D F– A

5 Animal you see in zoo with real long nose. (Long pause)
Dd F– Ad

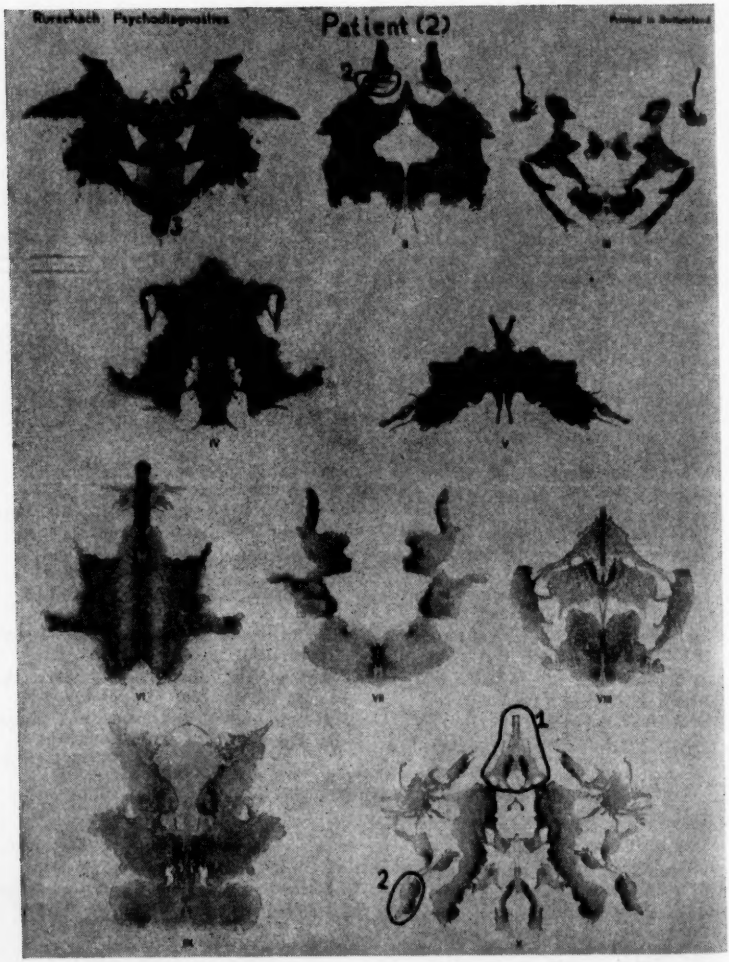
6 Faces (Long pause)

315″

4 Now don't think it looks like it. But in way it does. Probably shape. (One of lower green details plus "rabbit" detail)

5 Nose. Eyes. Shape. (Upper half of upper gray detail)

6 Can't find it.



Name: Patient (2) Age: 18 Date: 9/23/47

CARD I

12″

1 Some kind of insect. Nothing but ink and spots. (Long pause wants to stop.) Urged.
W F+ A

1 (W) No special insect. Wings. Feelers.

2 Pair of hands
D F+ Hd

2 Thumb. Fingers. (Q.) More like woman's hands. (Upper middle projections)

3 Shape of a body. Legs.
Dd F+ Hd

3 Starts at waist. Hips. Legs. (Q.) Don't know . . . More like a woman's. (Inside area of usual middle "person" detail)

145″

CARD II

80″ Got me there. (35″)

1 Some kind of animal
D FY+ A P

1 (Usual) Bear. Shape. Hair (color)

2 Some kind of bird
Dd F+ A

2 Shape of head. Wing. (Lower half of upper red)

3 Some kind of insect
D F+ A

3 (Lower red) No special kind. Wings. Antenna.

180″

CARD III

48″

1 Some part of the body—but don't know which part.
D CF An

1 (Lateral red) Not the stomach. Maybe the intestines. With stomach shape. The red is emphasized.

2 Lungs
D FC− An

2 (Middle red) Shape of them. Color.

120″

CARD IV

70″

1 Some vicious varmint
W FY A

1 (W) Eyes. The color of it. The black. Wings. Head. Outline shape.

85″

CARD V

8″

1 Bat. Nothing else.
W F+ A P

1 (Usual) Wings. Head.

60″

CARD VI

1 Don't know. Like things we did in school. Drop ink, etc.
Reject

1 Reject.

90″

CARD VII

V
1 Don't know. — 1 Reject.

130″

CARD VIII

30″

1 All parts of the body aren't they? Or are they? — 1 Referring to all previous cards. Could not obtain a reason for this.

(Very long pause)

2 Some animal.
D F+ A P — 2 (Usual) Most like a rat. Shaped like it.

150″

CARD IX

85″

1 Nothing at all. — 1 Rejected.

CARD X

15″

1 Person's windpipe with lungs.
D F+ An — 1 Windpipe - Long - Shape. (Upper gray detail) Lungs - Shape of them.

2 Stomach.
Dd F An — 2 Shaped something like one. (Lower outer lateral brown)

3 Don't know what most of them are.

120″

Many of the records are simply marked by constriction; but such constriction is characteristic of many other clinical groups. The chief value of the Rorschach here seems to lie in its combined use with other data in arriving at an evaluation of the full seriousness of the conversion syndrome shown.

SUMMARY

1. The Rorschach records of twenty female conversion hysterics of average intelligence were found in the main to be constricted, guarded, and displaying few of the more complex determinants (M, FC, FY).

2. The clinical symptomatology of the conversion patients is correlated with the character of their Rorschach records. In general, constricted records coincide with circumscribed and limited symptoms; whereas the looser records occur in cases with more extensive and more disabling symptoms.

3. The Rorschach records of these conversion patients are not uniquely distinctive and overlap the records of various other groups.

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BOOK REVIEWS

Blum, Gerald, *The Blacky Pictures.* New York: The Psychological Corporation, 1950. Set of 12 plates, inquiry cards, and manual, pp. 22.

Although projective techniques stem indirectly from psychoanalytic theory, the majority of them are not closely tied to psychoanalytic or to any other definite personality formulation. Usually one does not find a clear statement of either the theoretical concepts which have guided the construction of the test or of the conceptual system to be used as an aid in test interpretation.

The Blacky Pictures are unique in attempting to evaluate the subject's status in terms of a number of specified psychoanalytic variables. The test consists of 12 cartoon drawings. The first cartoon introduces the cast of characters: Blacky, presented as a young dog of the same sex as the subject; Tippy, a sibling of unidentified sex; and their parents. The subject is asked to tell a story about each of the other 11 cartoons. A series of questions is asked after each story. The subject then separates the cartoons into those liked and disliked, and indicates the single cartoons he likes best and least and reasons for these choices. The drawings are highly structured in contrast to the usual ambiguity of projective technique stimuli. The author believes, however, that this structuring is compensated for by a facilitation of personal expression due to the use of animals rather than humans. Further, it is claimed that the animal characters appeal to the infantile residues in the subject's thinking, i.e., to the variables the test proposes to investigate. Relevant to this claim was a study performed with college students: although 75 per cent showed some insight into the purpose of the technique their protocols did not differ from those of the non-insightful subjects.

Each cartoon and related set of questions are designed to tap a different dimension of psychosexual development, or of object relationships in this development, such as oral eroticism, oral sadism, anal sadism, oedipal intensity, masturbation guilt, positive ego ideal, and narcissistic vs. anaclitic love-object. Since the cartoons are highly structured there is little doubt, on a face validity basis, that they depict situations relevant to the dimensions under scrutiny; the oral eroticism cartoon, for example, depicts Blacky nursing on his (her) mother. The test is non-nosological; it is dynamic in the sense of orientation toward largely unconscious patterns of motivation. It is also therapeutically oriented, for the author believes its primary function is that of providing indications for therapy and acquainting the therapist with the personality of his patient. Obviously this function might be limited to therapists who are themselves psychoanalytically oriented.

Contrary to the usual situation in projective testing, most of the questions asked in the Blacky test are of the multiple choice type. On an *a priori* basis, one choice in each set has been designated as neutral and the others as indicative of maladjustment. The criterion for these

designations was that the neutral answer had to be chosen by the majority of test subjects, with other choices evenly distributed.

On the basis, then, of four data sources—the spontaneous stories, answers to questioning, sorting of cartoons, and comments made by the subject about cartoons other than the one being used at the moment—plus information as to age and sex of siblings and age of parents, interpretation can be made of the psychosexual history and status of the subject. Interpretation can be approached quantitatively by weighting degree of disturbance on each dimension as evidenced in the sources; or, preferably, qualitatively by looking for a psychosexual pattern which lends congruence to all source data in all dimensions. The recommended qualitative approach thus frankly depends for correctness on intuition and on the evidence of internal consistency in interpretation. For example, since it is assumed that the multiple choice questions tap levels close to consciousness, choice of a neutral answer is considered an indication of either genuine absence of disturbance or denial of disturbance; the latter possibility must be checked by reference to the other data sources. Similarly, one notes possible contradictions between preference for a cartoon and the character of the story and the inquiry responses to that cartoon. In general, qualitative interpretation proceeds on the basis of looking for latent content rather than on the face value acceptance of the subject's statements. This content is inferred by use of common clinical criteria of disturbance: intensity of emotional expression, defensiveness, evasions, slips, etc. The manual presents a sample case and interpretation illustrating these points and examples of stories to be rated as "strong" and "not strong" for each dimension.

The evidence for the validity of the technique is avowedly incomplete. As of the present, evidence for validity is drawn from two sources—the feeling of clinicians who have used the test that it is extremely helpful, and an investigation[1] by the author into sex differences in psychosexual development and interrelations between psychoanalytic dimensions as manifested by Blacky Picture protocols of a fairly large number of college students. This investigation showed that a large majority of the significant quantitative differences in test performance between male and female students and of the dimensional intercorrelations found were derivable from psychoanalytic theory. Parenthetically, it may be noted that the methodology of this study has been attacked by Seward,[2] primarily on the basis of Blum's procedure of looking for Freudian explanations for all empirically found relationships. A more stringent deductive method would involve prediction of the relationships from the theory rather than consideration of only those relationships empirically found. A second possible criticism of the study is that the lack of formal clarity in much of psychoanalytic

[1] Blum, Gerald. A study of the psychoanalytic theory of psychosexual development. *Genet. psychol. Monogr.*, 1949, *39*, 3-99.

[2] Seward, John. Psychoanalysis, deductive method, and the Blacky Test. *J. abn. soc. Psychol.*, 1950, *45*, 529-535. See also Blum, Gerald. A reply to Seward's "Psychoanalysis, deductive method, and the Blacky Test." *J. abn. soc. Psychol.*, 1950, *45*, 536-537.

theory makes it difficult to assess the subjective probability that the relationships found by Blum *do* flow logically from psychoanalytic tenets. Nevertheless, Seward has challenged only a few of Blum's specific findings and interpretations. To this extent, at least, there is evidence for test validity. The evidence does not necessarily imply usefulness and validity in the *clinical* setting, but it contrasts with the lack of objective validity evidence of any type in the case of a number of other projective techniques.

In summary, the Blacky Pictures constitute a simple and ingenious device which promises to contribute to future clarification of systematic problems of personality and to take its place as a welcome addition to practical clinical instruments. Not the least of the favorable prognostic indications for it is the author's sophisticated awareness of such problems as the identification of the levels of personality tapped by a projective technique, the nature of interpretation, and the effect of partial structuring in a projective technique. The manual communicates a clarity of thinking about these issues that is refreshing by contrast with the muddled state of much past and some present work in projective psychology.

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Rosenzweig, Saul, with the collaboration of **Kogan, Kate L.** *Psychodiagnosis. An introduction to the integration of tests in dynamic clinical practice.* New York: Grune and Stratton, 1949. 380 pp.

His principal reason for writing a new book on the use of tests in diagnostic work, Dr. Rosenzweig tells us in his preface, was a need that he had discovered in teaching "beginning students in professional psychology, as well as those in the allied fields of medicine, nursing, occupational therapy and social work." This need was for "an up-to-date introduction to psychodiagnosis that could be read in a short time and understood without extensive background."

The book should be evaluated, then, in relation to this avowed objective; and it can be said right away that it does achieve this objective very adequately. It is clearly and simply written, well organized and reasonably comprehensive in its coverage of methods in current usage. The point of view is generally progressive and sound. I liked particularly the attention that was given to the problem of integrating the results from several methods, and the stress on the need for a thorough synthesis of inferences from tests with data of other kinds, historical and observational.

The introductory chapter orients the reader to the psychodynamic point of view in diagnostic work, bringing out a strength of the book which is also a weakness. "Diagnostic labels are clearly secondary to psychodynamic considerations." Amen, most of us will chorus. But in the name of abandoning mere pigeon-holing, clinicians these days too often underemphasize structural in favor of dynamic considerations. Throughout the book, the psychodynamic inferences drawn and integrations of cases are admirable; but by contrast the discussions of the structural aspects of personality are disappointing. The lack of any systematic concepts of ego-structure makes the discussion of results in this area seem unduly

vague and inconclusive especially when non-projective tests are treated.

There are three principal parts to the book: first, in a group of six chapters, 22 of the most important and widely used tests of intelligence, intellectual deviation, vocational aptitude and interest, and personality are presented; second, the process of psychodiagnostic integration is exemplified by means of three cases which are discussed in considerable detail; finally, eight case reports illustrate more briefly the applications of the methods that have been described to a variety of clinical conditions. Particularly commendable in the brief and excellently ordered exposition of each test is the inclusion of one or more actual cases. Some facts about the patient, reasons for testing, the test results and their interpretation are given, making the nature and uses of each instrument vivid and concrete.

It is disappointing to find no section devoted to interviewing or history-taking, and no explicit recognition that diagnosis rests basically on a consideration of the patient's difficulties in living, as reported by himself and those who have been in contact with him in everyday life. It is there implicitly, but for the benefit of enthusiastic neophytes or persons who are dazzled by the mystique of projective testing, it would have been better to have said it plainly.

The book's principal weakness as an introduction to psychodiagnosis, particularly for students who will do no further reading, lies in its avoidance of the crucial issue of *validity*. It is too easy to get the impression that the authors accept completely the claims that are made for the tests, and that they use certain interpretative principles uncritically, though the validity of these principles has never been demonstrated. For example, in presenting the Babcock test they state: "Comparison of the vocabulary score with the other scores reveals the degree to which the individual's present functioning level coincides with his original level," ignoring Feifel's work in demonstrating that the apparent relative stability of vocabulary is an artifact of scoring method. It is not to be expected that an introductory book would spell out all of the conditions under which Babcock's assumptions may be (cautiously) accepted. It would have been easy to include a little critical evaluation throughout, which would have helped prevent that overselling of tests to which clinical psychologists are unfortunately prone. For example, the exposition of the Bernreuter inventory could easily have included Flanagan's factor-analytic finding that three and not five separate traits are measured by this test.

The discussion of the Rorschach test has a similar defect, besides being so brief as to be almost misleadingly general. Despite the lack of positive evidence and in the face of Roe's and Zubin's findings, human movement responses are blandly presented as an indication of the subject's "capacity to be creative," and in general the various scoring categories are treated as if their significance had been thoroughly established.

An almost opposite criticism may also be made: that in their discussions of the separate instruments, too often the authors seem to get so little out of a test interpretatively that one might well wonder what purpose had been

served by using it. The brilliance of some of the case demonstrations in the latter part of the book — notably the chapter on "Uxoricide on an unconscious basis"—is proof enough that Rosenzweig and his co-workers really are able to learn a great deal about a person from diagnostic tests, particularly when taken in conjunction with life-history materials. It is of course very difficult to steer a true course between the encouragement of wild speculation and the over-conservative error of being unwilling to conclude more from a test than a possibility that the patient may be sick. In such a situation, it is probably easier to err on the side of caution.

Chapter 7 on Projective Methods (Word Association, Rorschach, TAT, World Test, Picture-Frustration) contains two solid contributions of interest to readers of this Journal. In fourteen pages there is an excellent and comprehensive treatment of the senior author's own test, the Picture-Frustration Study, with examples showing clearly how it is scored and interpreted, and how it may be useful in clinical work. And then, in 20 pages there is the first published exposition of Rosenzweig's technique for analyzing the TAT, which he calls the Composite Portrait method. Promising a detailed presentation in a future publication, he sketches out the six stages that are involved in his analysis of a set of stories. They are worth quoting in full.

> "The steps of the procedure are: (1) Assimilation of the stories by several careful and complete re-readings. (2) Descriptive analysis of the productions, one by one, under the six headings as follows: (a) Identification—determining the central character of each narrative, the one with whom the subject is presumably identified and from whose standpoint he tells the story; (b) Figures—ascertaining the chief other figures of the production and the manner in which they are characteristically depicted; (c) Trends—the needs and goals (aggression, anxiety, etc.) around which the stories revolve; (d) Dynamic clues, including sequence—outstanding distortions in the description of the pictures, blocking as indicated by long initial reaction times, displacement and other dynamic clues evident in the relationships between successive stories; (e) Endings—in terms of happiness, realism, etc.; (f) Formal features—narrative level (enumeration, description or interpretation), breadth of vocabulary and other indications of creative capacity. (3) Statistical evaluation of the responses by references to available norms in order to determine the degree to which the subject's picture-descriptions and narratives deviate toward uniqueness from those usually given. (4) Topical generalizations (horizontal) in which the common elements of the stories under each of the six analytic headings are abstracted. (5) Composite generalizations (vertical) in which the relationships among the topical generalizations are developed. (6) Integration of the composite generalizations with anamnestic and other-test data to educe significant psychodynamic hypotheses."

The examples given show this to be an eminently practicable method of getting at the meat of the TAT, one which is directly applicable in everyday clinical practice (unlike so many other, more ambitious interpretative schemes). Here, as elsewhere, Rosenzweig demonstrates his keenness in following the essential psychodynamic threads of the case and tying them together meaningfully, and with it a characteristic weakness: he fails to utilize fully the formal characteristics of the story productions. It is true that formal aspects are

considered in the method, and that inferences about the cases are drawn from them throughout the book. They tend to be used in two ways: as "complex indicators" (e.g., note is taken of *blocking* as pointing to an area of conflict), and as a basis for inductions about the cultural and intellectual level of the subject. What is missing is their use to furnish hypotheses about ego-structure, the patterns of coping with the world that are characteristic of the person. This is a minor criticism, however. Rosenzweig's method promises to have the great virtue of being more easily teachable than most others, which recommends it strongly to the many clinicians who have won for themselves an understanding of the TAT but have found it very difficult to develop similar proficiency in students.

There are a number of minor errors, such as occasional incorrect computation of weighted color sums and inconsistent scoring of the Object Sorting Test, but they do not detract greatly from the usefulness of the book as an introductory text. The advanced worker in the field of projective techniques will not discover a great deal that is new or instructive for himself in this book, but he may find it quite useful as a way of presenting a quick and intelligible overview of psychological testing to students or colleagues.

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THE TAT NEWSLETTER

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Annual Bibliographic Issue. All psychological publications these days are badgered by limitations of space; the Newsletter is no exception. There is enough interesting and useful material in the quarter's correspondence to make a plump and meaty issue, but it will have to wait. If the bibliography isn't brought up to date once a year, there'll be no controlling its growth at all.

For publications about the TAT continue to pour out. I have tabulated all of the references in the first five sections of the bibliography and supplement, with this distribution as a result:

1	0	2	4	1	3	5	13
1935	'36	'37	'38	'39	'40	'41	'42
15	20	26	35	46	54	54	53
1943	'44	'45	'46	'47	'48	'49	'50

The tally also makes it appear likely that not all of the 1950 references have turned up as this goes to press, in January, and next year's supplement may even include a few from '49 and perhaps earlier years, as this one does. Because of this lag, it's not safe to assume that we've hit a plateau in publication.

The Supplement. For the last time (I hope), the Newsletter will be unable to make good on something that was confidently forecast. There are no annotations for the references, and there won't be any. There simply isn't room. Instead, the system of classification has been further subdivided, to provide a maximum of information about the contents of the more important groups of references—the first three.

The old bibliography has been re-classified, in order to provide added information about all references. Each section begins, then, with a series of numbers: the numbers of the relevant references in Vol. III, No. 4 (pp. 82-100 in the 1950 volume of the JPT). A few cross-references are included in brackets, when a reference could be classified under more than one heading. To make the bibliography cumulative and to facilitate references to it by number, the numbers of the new items begin where the basic bibliography left off.

The first section, *Principal References,* now has six subdivisions. In the first are put general discussions of the TAT, including published manuals, and a few references which are less basic but which do not deal with the other more specific topics. Studies which present tables of normative data, based on samples of at least 20 cases, make up the second section. Third come a group of mainly experimental attempts to study the psychological mechanisms which bring about TAT responses or some of their specific aspects: here may be found more or less "basic researches" on projective perception, and somewhat more applied work on the properties of the particular cards now in use. The recent upsurge of work in the field of "social perception," or of the perceptual aspects of personality, has deliberately been excluded (as too extensive) except for a few cases in which direct reference to or use of the TAT has been made. Studies which are focussed on re-

liability and validity comprise the next subdivision, followed by therapeutic application of the TAT: these categories seem self-explanatory. The Thompson modification for Negroes, strictly speaking, should go into the *Related Techniques* section, but it seemed such a close relative that references to it were kept in the smaller family circle.

There is a large group of articles discussing the application of the TAT to various pathological groups, the characteristics of stories told by patients of various kinds, etc. These were formerly divided into subgroups, one of which appeared under I, the other under II. It has become increasingly clear that it was artificial and perhaps invidious to try to decide whether the emphasis in an article fell on the TAT or on the nature of the subjects, so the distinction has been abandoned, and the combined group forms the first subdivision of II, *Research Studies Using the TAT*. The second includes the original OSS "assessment" study and its many heirs. In the third group may be found research on "normal personality" and a group of investigations into the personalities of persons in occupational groupings, so that the distinction from the "selection" studies is a rather blurred one. Subgroup *d* puts together a rather heterogeneous group of references, which have in common that the TAT was used to provide some kind of (usually quantitative) data on personality to be related to some more or less specific structural or functional aspect of personality which was under investigation. There are a few references to evaluations of different kinds of therapy in which the TAT was used; they form section *e*. Next comes a number of researches in social psychology, in which the TAT was one of the instruments used. Anthropological studies, most of which were described in the last issue of the Newsletter, again might have been put under the general heading VII, since almost all of them have used pictures other than Murray's, but they are kept here largely because they form an important group. Finally, there are a couple of studies in which the TAT was used as a criterion against which other tests were validated—an amusing development, in a way, when the validation of the TAT itself is a subject of very active study!

The case studies have been dichotomized on the simple basis of whether or not a relatively complete TAT protocol with interpretation was included. Case studies with protocols will generally be most useful for learning and teaching TAT interpretation.

In the course of this reclassification, a good many errors of categorization were found and corrected, but it seems certain that many more remain. Please help out if you discover something that was misclassified or omitted. A final minor point: I decided to reclassify articles under *Unpublished References* when only the titles have appeared in print.

Errata. A couple of real howlers got through last year, and are hereby apologized for. The reference (No. 50) to the TAT itself—of all things!—was faulty; instead of reading "Picture 5 and manual . . ." it should of course read "31 cards and manual . . ." In reference No. 117, authorship is incorrectly ascribed to David M. Levy; the actual authors are ROBINSON, Harvey A. and SHOR, Joel.

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[See also: 52, 58, 412]

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GENERAL NEWSLETTER

Pereira, Alfredo de Oliveira. Psicodiagnostico miocinetico do Prof. Emilio Mira y Lopez—observacoes estatisticas. *Arquivos Brasileiros de Psicotecnica,* 1950, *2,* 29-58. A discussion of the general characteristics of the Myokinetic Test with score distributions of samples of normals, Indians, murderers, immigrants, adolescents and others.

Bruno, Antonio Miguel Leao. A importancia do contuedo das respostas no Psicodiagnostico de Rorschach. *Arquivos da Policia Civil de Sao Paulo,* 1949, *17,* 709-761. A discussion of criteria for content classification and interpretation on the Rorschach with consideration of diagnostic implications for psychoanalytic theory. Fifteen Spanish and Portuguese references as well as German, French, and English.

The Research in Contemporary India Field Project has completed the initial phase of a two-year program of research on cultural-historical factors in character formation by means of study of three contrasting Indian villages: Hindu, Moslem, and Old Christian. This is part of a program in contemporary Middle and Far Eastern cultures launched by Dr. Abram Kardiner under the auspices of Columbia University's Departments of Sociology and Anthropology. Dr. and Mrs. Gitel Steed are carrying on the project with a staff of anthropologists, psychiatrists, and Indian psychologists who are assisting in the adaptation of the Rorschach, T A T, and other projective methods.

Cotte, S. A propos d'omissions ou de dissimulations dans le test de Goodenough. Confrontation avec le psyco-diagnostic de Rorschach. *A Crianca Portuguesa,* 1949, *9,* 3 - 30. Goodenough drawings were obtained from 20 problem children. Those who omitted or concealed the hands on their drawings showed Rorschach evidence of unconscious self-punishment for feelings of guilt.

Schachter, M. and Cotte, S. Psychodiagnostic de Rorschach et enuresie. *Archives de Neurologie,* 1950, *7,* Rorschach data of 70 enuretic children are compared with those of 40 controls suffering from a variety of psychological problems.

Kussrow, Z.G. and Larez, B. Pesquisa sobre agresividad en el psicodiagnostico miokinetico del Dr. Emilio Mira Y Lopez. *Asquivos Brasileiros de Psicotecnica,* 1950, *2,* 23 - 38. Myokinetic tests of 100 male adolescents revealed a high degree of internal consistency among measures of aggressivity.

Schneider E. O teste de classificacao de objetos. *Arquivos Brasileiros de Psicotecnica,* 1950, *2,* 39-44. A scoring scheme is presented for quantitative interpretation of a sorting test developed by Mira and now in use diagnostically in Brazil.

Hiroshi Motoaki, Assistant Professor of Psychology, writes from Japan to inform us that the Rorschach is now widely studied in Japan. He indicates that the users of the Rorschach technique in

Japan are most anxious for mutual exchange with Rorschach workers elsewhere. For those who may wish to communicate with him, the address is Waseda Daigku Shinrigaku, Kyoshitsu, 1 chome, Tozuka-machi, Shinjiku-ku, Toyko, Japan.

THE UNIVERSITY OF MIAMI
Coral Gables (University Branch), Florida
DEPARTMENT OF PSYCHOLOGY

August 31, 1950

Dr. Mortimer M. Meyer
3041 Sagamore Way
Los Angeles 65, California

Dear Dr. Meyer:

Because of my recent experiences I should like to reiterate a caution, and incidentally register a complaint, with reference to the new crop of Rorschach plates. For the second time I received a response to an inadvertence in the printing of the colored plates. A rather compulsive patient reacted to the minute checker-like markings in the middle upper-third gray detail of Card eight as follows, "In printing the card a piece of fabric is imitated in gray." A short time ago I received this response to the brown detail of Plate ten, "This could be a St. Bernard dog lying down, but he wouldn't have these box-like markings on his fur."

I called this responsiveness to an inadvertence since these effects do not appear in the set of plates I bought in 1938. The printers may very well have given the Rorschach testers an added device for detecting the pedantic personality. Or it may be that new printing plates are necessary.

I would appreciate if you could call this to the attention of your readers. Perhaps others have had similar experiences. If so, we may be able to use these common experiences in a client-centered analysis.

Sincerely yours,

Robert M. Allen, Ph.D.
Professor of Psychology

ANNOUNCEMENTS

SOCIETY FOR PROJECTIVE TECHNIQUES AND RORSCHACH INSTITUTE

ANNUAL MEETING

Preliminary Announcement and Call for Program Participation

Date: During the week of the Annual Meeting of the American Psychological Association, August 31-September 5, 1951.

Place: Hotel Sherman, Chicago, Illinois.

Program: Tentative plans provide for a symposium and/or round table, two or three sessions of contributed papers, a symposium and/or round table jointly sponsored with the Division of Clinical and Abnormal Psychology, a business meeting, and a dinner meeting.

Call for Program Suggestions

Members are urged to send proposals for symposia and round tables. Outline your ideas and nominate participants. An earnest request is made that you send your proposals as soon as possible, and prior to April 1, 1951.

Call for Papers

1. Members are invited to submit abstracts of papers reporting research, presenting significant case studies, describing new tests or techniques, or discussing important theoretical issues.

2. Non-members may submit abstracts provided they are sponsored in writing by a member.

3. Abstracts should be typed on one side only, double-spaced, and in quadruplicate on 8½ x 11 white paper.

4. The abstract must not contain more than 300 words. If it can be outlined according to the following form, the task of evaluation will be facilitated:

Title of Paper:
Problem:
Subjects Used:
Procedure:
Results or Conclusions:
Size of Slides, if any:

5. Twenty minutes is the time allotment for reading and discussion of each paper.

6. Abstracts must be in the hands of the Chairman of the Program Committee by April 1, 1951.

ESTHER KATZ ROSEN
Chairman, Program Committee
239 W. Allen Lane,
Philadelphia 19, Pennsylvania

ANNOUNCEMENTS OF SUMMER WORKSHOPS, 1951

Dr. Marguerite Hertz, Associate Clinical Professor of Psychology will conduct three workshops at Western Reserve University, Cleveland, Ohio.

Credit: One Hour. Fee: $40.00.

Workshop I: Introduction to the Rorschach. June 4-8, inclusive. Lectures, demonstrations in the hospitals, supervised training periods.

Workshop II: Intermediate course in the interpretation and clinical application of the Rorschach method. June 11-15, inclusive. Lectures, demonstrations in the hospitals, supervised training periods.

Workshop III: Advanced course in interpretation of Rorschach records of various personality and

clinical groups. Participants may submit records for study. June 18-22, inclusive.

Registration should be made in advance to Secretary, Department of Psychology, Western Reserve University, Cleveland 6, Ohio.

Clinical Psychology Workshop emphasizing projective techniques and their role in personality study will be offered in Asheville, N. C. from June 11, 9:00 a.m. to June 23, 12:00 a.m.

Tuition: $50.00. Basic and advanced courses with joint courses for both will be offered. Meetings will be held at Highland Hospital, Asheville, N. C. and at the George Vanderbilt Hotel in Asheville, N. C.

The staff will include Louis D. Cohen, Ph.D., Duke Hospital and Duke University; Bingham Dai, Ph.D., Duke University; Walter G. Klopfer, Ph.D., Duke University; Consultants are R. Charman Carroll, M.D., Highland Hospital and Duke University; Robert L. Craig, M.D., Highland Hospital and Duke University.

Applications should be sent to Mrs. Arleen Girdner, Workshop Secretary, Box 3432, Duke Hospital, Durham, N. C.

Dr. Bruno Klopfer and associates will conduct two workshops in projective techniques as part of the summer session of Claremont College.

Credit: 3 points, per workshop. Tuition: $50.00.

Workshop A: Claremont College, Claremont, Calif. July 23-August 4. Introductory seminars for beginners will be offered at Workshop A only. Successful completion of Workshop A qualifies a student for Workshop B. Intermediate and advanced seminars will be given at both workshops.

Workshop B: Asilomar, Pacific Grove, Calif. August 8-18. Only intermediate and advanced seminars will be given at this workshop. For seminars for beginners see Workshop A.

Send applications to: Dr. Bruno Klopfer, 480 Redwood Drive, Pasadena 2, Calif.

Department of Psychology, University of Chicago, announces two workshop seminars in the Rorschach Test, to be conducted by Dr. S. J. Beck.

Session I: June 4 to 8 — Basic processes including administration, scoring and structuring the Rorschach test up to the point of scoring. Open to students ready for or at the interne level.

Session II: June 11 to 15 — Advanced clinical interpretation. Progressive conditions in mental disease, as projected in the test. Admission limited to psychologists and psychiatrists in clinical positions or practice.

For information write to Miss Lorraine Bouthillet, Executive Secretary, Department of Psychology, University of Chicago, Chicago 37, Illinois.

MEMBERSHIP

On December 8th, 1950 the following members were approved for elevation to fellowship status:

Dr. Charlotte Buhler
Dr. Heinz Lehman
Marie Wilson Peters
Dr. L. Joseph Stone
Frederick Suessmilch

On the same date the following persons were approved for membership:

Thelma Gordon
Dr. Pearl Greenberg
Albert R. Hahn
Ethel Hartzler
Dr. Reuben S. Horelick
Beatrice W. Marker
Fred A. Stonesifer

On January 26th the following persons were approved for membership:

Sylvia Brecher
Eugene Cease
Raymond Gilbert
Searles A. Grossman
Hermione Hawkins
Andre Lussier
Sonja A. Rath
Irving R. Stone
Steven G. Vandenberg

The following persons have been approved for elevation to fellowship:

Dr. Robert M. Allen
Dr. Octavia Pearl Butler
Dr. Milton S. Gurvitz
Dr. Esther Katz Rosen
Dr. Percival Symonds

Dr. Frederick Wyatt, chairman of the membership committee, reported that all complete applications for membership had been processed but that there were 35 applications for whom sponsorship was either incomplete or incorrect and therefore could not be processed thus far. Any applicant who feels he may be in this group, is encouraged to write to Dr. Wyatt, at 379 School Street, Watertown 72, Mass. for further information.

ERRATA

We regret the occurrence of the following errors and request that our readers make the appropriate changes:

1. The address of Mr. Zoltan Jacob was erroneously reported as

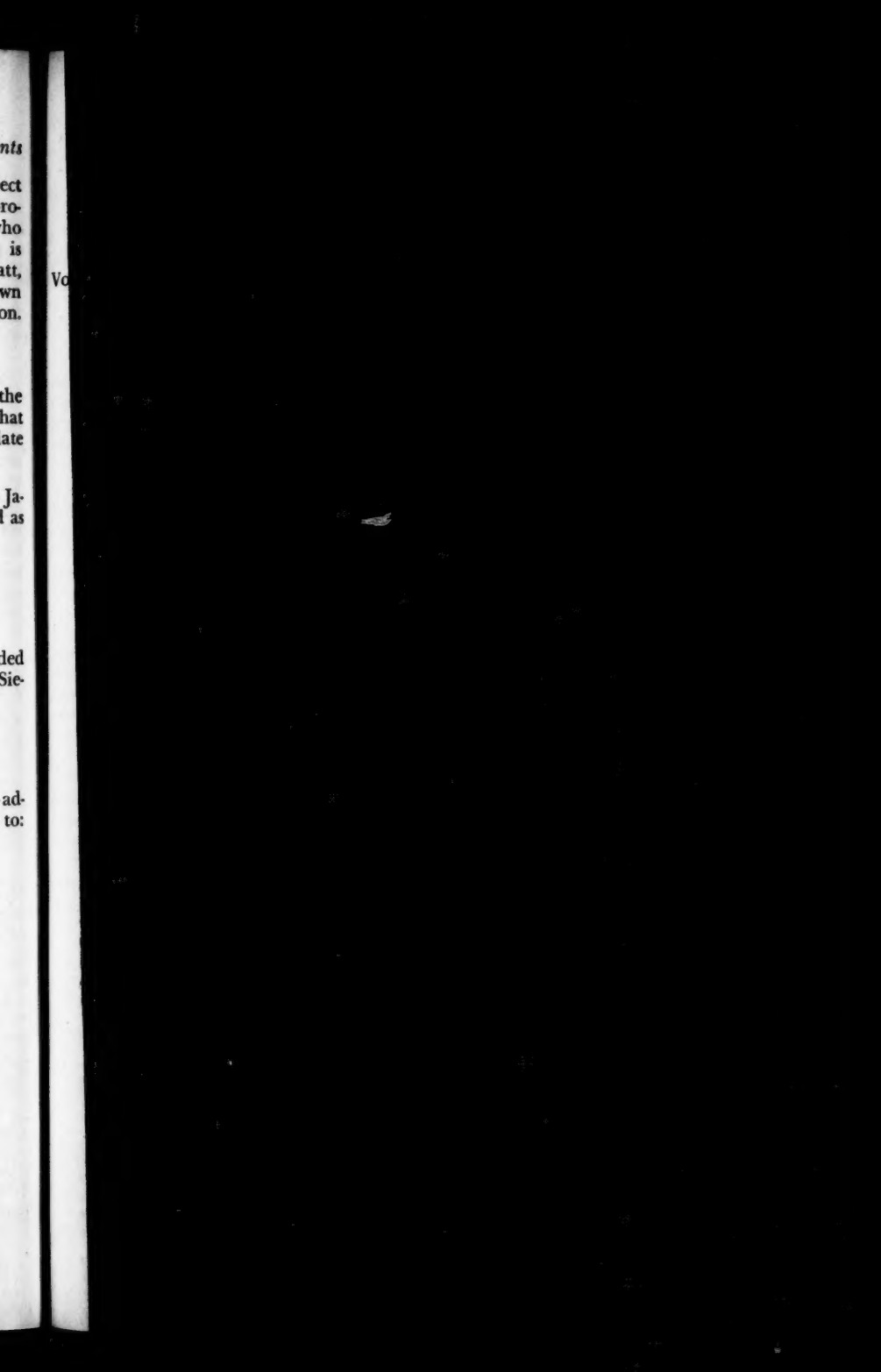
   542 Lockerbie Street
   Indianapolis, Ind.

   The correct address is:

   3155 Rochambeau Ave.
   Bronx 67, New York

2. Ph.D. was incorrectly included in the listings for Mr. Max Siegel and Mr. David Ruja.

CHANGE OF ADDRESS OF THE EXECUTIVE EDITOR

Please note the change of address of the Executive Editor to:

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